

FEB 18 1924

# Railway Age

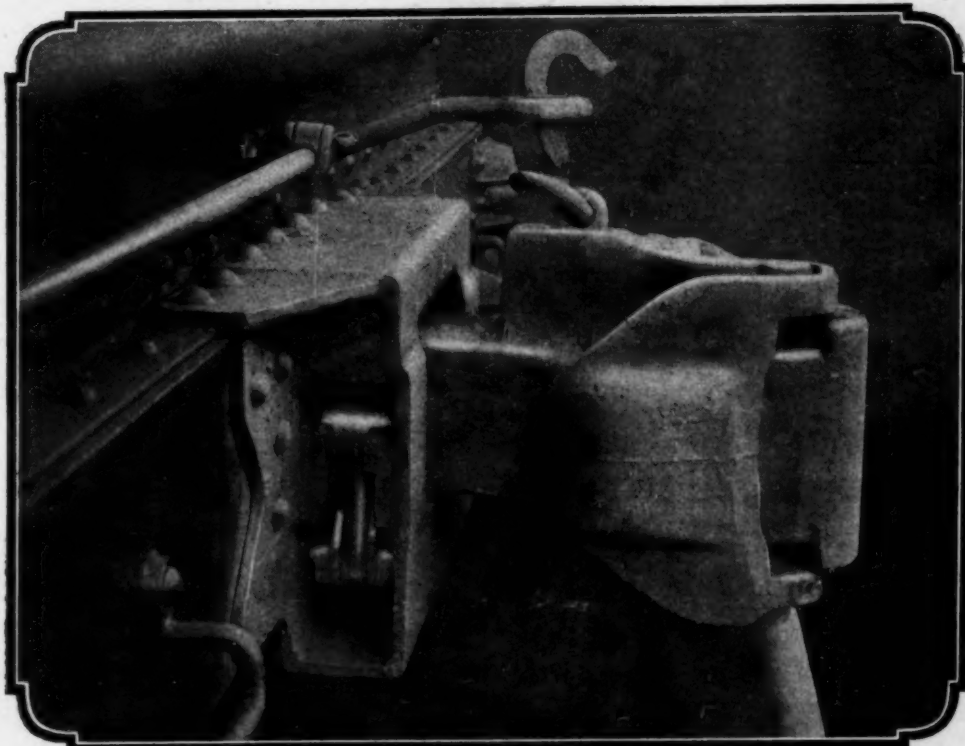
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SIXTY-NINTH YEAR

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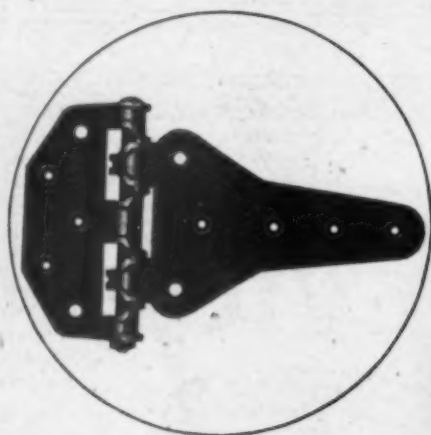
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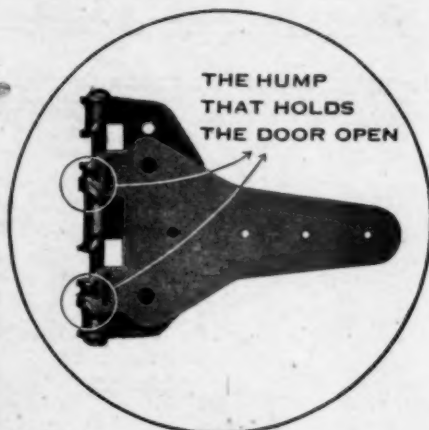
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# EDITORIAL

The logo for 'Railway Age' is integrated into the word 'EDITORIAL'. The letters 'R', 'A', and 'G' of 'Railway Age' are stylized to look like a steam locomotive, with smoke coming out of the smokestack and wheels visible. The word 'EDITORIAL' is in a large, bold, serif font.

The Table of Contents Will Be Found on Page 5 of the Advertising Section

The recent severe winter weather in the northern parts of the United States and Canada provided a real test for engine terminal power plants which were required to furnish an abnormal amount of steam for heating purposes, blower lines and other requirements.

## Terminal Power Plants Tested

In some cases, owing to inadequate original design or being outgrown, these power plants failed to meet the test, as for example when one of the most important main line terminals on a railroad operating out of Chicago was completely tied up by lack of steam for the blower lines. This terminal is said to be modern in every other respect but because steam was not available for the blowers used in firing up locomotives, the terminal was unable to furnish the motive power called for. The question of adequate power plant capacity at engine terminals is one which deserves and is receiving most careful attention on some roads. The New York, New Haven & Hartford has changed from coal to fuel oil at its Southampton Street, Boston, enginehouse within the last year, thereby securing an increase in capacity which enables two 300-hp. boilers to carry a load readily which would otherwise require the installation of an additional boiler. Greater efficiency and capacity can also be obtained by the use of superheated steam, and some roads, including the Nickel Plate and the Nashville, Chattanooga & St. Louis, are now installing superheaters in stationary boilers at large locomotive terminals. With the increase in capacity it is also highly important to provide steam lines of ample size and properly lagged to reduce condensation losses to a minimum.

Portland cement has been used for 100 years but most of the advance in concrete design, the improvement in the art of making good concrete and the enormous developments in the application of this valuable material in construction have taken place during the last 20 years. Organized at the very time

## The American Concrete Institute

when the more progressive of American builders foresaw the possibilities of Portland cement concrete, the American Concrete Institute quickly became an important factor in its progressive development. Its influence has extended in many directions but probably has been most potent in developing standards of good practice in both design and construction. As the utilization of concrete expanded to include buildings as well as bridges and culverts, the more complex problems of multiple-story building design gradually claimed an increasing proportion of the time and effort of the leading designers of reinforced concrete. This was naturally reflected in the activities of the institute and its committees so that flat slab design and the construction problem of the building constructors had the foremost place in the programs of this organization's conventions. These matters, of course, were largely foreign to the interests of the railway engineers, with the result that only a relatively small number of them took any part in the institute's work. However, in recent years, with a growing appreciation of the fact that the intrinsic quality of the concrete itself is of paramount importance, the institute has devoted a larger share of its attention to this

phase of concrete development. As this is a matter of fundamental importance to all users of Portland cement, it behooves the railway engineer who is engaged in the design and construction of concrete structures to take a more active part in the institute's affairs. There is still much to be learned about concrete, but if the principles of good practice, established on the basis of investigations completed to date, were observed conscientiously by all builders, there would be very few failures. Railway engineers have an important responsibility in insuring that the work done under their direction is conducted with a proper regard for accepted rules for good work.

Progress in railway statistics—as in any other kind of statistics—must perforce prove often a series of compromises between the desire or necessity for change on the one hand, and the need for comparability on the other. When new statistical units or new methods of statistical compilation are substituted for old, the new figures may be better ones, but comparison between the new and the old figures is made difficult and sometimes impossible. It may be presumed off-hand that some of the simplest figures to use would be those of the total operating revenues and expenses of the United States railroads. It is with some dismay, however, that one seeks a tabulation of such figures covering an extended term of years. The authoritative statistical compilations contain some figures including all roads, some Class I and II roads only, while some, notably since 1911, are for Class I roads alone. If the observer does not use great care, he will be using different bases of tabulation for different years and otherwise confusing his figures and the conclusions to be drawn from them. This is a situation that arises all too frequently in connection with the figures dealing with railway operation, in spite of the fact that the statistics relating to railways are supposed to be the most complete and scientific of those of any industry in this country. The reason for the situation is that those in charge of the statistical compilations of the Interstate Commerce Commission have apparently tended to subordinate the function of comparability and have carried out the progress element at the expense of the other and important desirability. This is apparently what is being done in the tentative revised classification of railway operating expenses recently offered for discussion by the Bureau of Accounts. This was the view ably pointed out by "Assistant Comptroller" in his article on that subject in the *Railway Age* of February 2, which he supplements with some practical suggestions in a second article in the present issue. The changes in general accounts and the transfer of primary accounts from one general account to another are so many in the tentative revision that no one will envy the user of the figures who has to compare results in years succeeding the change with those in the years preceding. If the proposed revision goes into effect many more railway analysts and statisticians will be needed in the work of explaining whether the many increases and decreases in the various general accounts are due to changed efficiency or to revision of the classification. We commend "Assistant

## The New Expenses Classification

Comptroller's" suggestions to those who are studying the revised classification. They offer a method of so changing the revision that thereby there will be secured benefit of the progress which it embodies without loss of the factor of comparability and without therefore the result of placing an undue burden upon those who will be called upon to use the figures.

"Cheer up, the worst is yet to come!" This phrase of the modern cynic is not wholly a joke. Often, it serves as

### Safety First Under the Microscope

a way of expressing the very practical fact that our problem contains a great variety of difficulties which we have not yet grappled with; the fact that we have been only half-hearted. Everybody has been considering accident records and "safety first" on the basis of the statistics published by the Interstate Commerce Commission; but Mr. Palmer, author of the paper abstracted in the *Railway Age* of December 1, 1923 (which showed some railroads to be much more efficient than others in reducing the casualty lists), tells us that those numerous accidents which are too unimportant to go into the government records have afforded a large and very useful field for instructive investigation. Our studies have not gone to the bottom of the question. The phrase we have quoted was used, very soberly and literally, the other day by a prominent and straight-thinking doctor of railroad laws—not a railroad president—in reference to the question of automatic train-stops. How near to the bottom have we gone in that question? Surprise checking of enginemen is a subject of which nobody has yet touched more than the fringe. We praise the idea with enthusiasm—and stop there. In a collision recently reported by the Interstate Commerce Commission, the engineman fell asleep—and admitted the fact, saying that he had even gone out to the front of the engine to arouse himself, but with only partial success—while the fireman and a brakeman, engaged in conversation in the cab, failed to see the danger signals (two signals) only because they were too dull or listless or thoughtless or lazy even to think of looking. This is a sample of real life in train operation, of a kind which never comes to light except in the investigations of collisions (and often is concealed even then). And is not this an immediate, pressing problem? Automatic train control may cure a part of our troubles some years hence; but why not try some of the remedies that are possible today?

## Organized Labor Takes Another Step in Co-operation

A GREAT DEAL has been said in recent months about the experiment on the Baltimore & Ohio of co-operation on the part of organized labor. This development, however, has been in process for less than a year and thus far the results have been discussed only in a very general way; it is to be hoped that more concrete and definite data as to what has been accomplished will be available in the near future. As a matter of fact, it is important to remember that thus far this experiment has been applied only to the Glenwood shops on the Baltimore & Ohio, although undoubtedly the spirit of co-operation has extended in a general way to other points on the system. Such concrete results as may be available in the near future will therefore largely concern this one plant.

Up to this time the experiment has been fathered and promoted largely by the International Association of Machinists; in other words, the other five shop crafts, although they co-operated in an informal way with the machinists, were not formally committed to the policy. During the past year, however, representatives of these shop crafts have closely fol-

lowed the developments at Glenwood and have been so greatly impressed that at a gathering of their leaders at Washington last week, they formally endorsed the plan and have adopted it as part of their platform, as is announced elsewhere in this issue.

It will be interesting to see just how this may affect the policy of the shop crafts unions and whether it will change their general attitude toward the railroads at large.

The development on the Baltimore & Ohio has been followed with great interest by many railroad executives. Some roads have even gone so far as to invite similar co-operation on the part of the shop crafts organizations. Meanwhile, however, not a few railway executives are inclined to be skeptical as to the sincerity of this movement. They point out the fact that the railroad labor union organizations continue to be just as unfair and violent in their criticisms of the railroads in their official weekly organ as they have been in the past, and that this paper and other labor union publications are doing all they can to discredit railroad managements and to destroy railroad credit. While it is true that they may go out of their way to favor and boost the Baltimore & Ohio, they are doing the Baltimore & Ohio and the railroads in general a most severe injustice and great harm by the unfair and scurrilous attacks that they are making upon the railroads. Incidentally, they cannot say too much in favor of the small group of radicals in Congress, whose sole aim seems to be to discredit private ownership of the railroads.

One railroad officer has expressed the situation in this way: "I continue to have an abiding faith in the honesty, fairness and intelligence of railroad workers. I am at a loss to understand, however, why it is that they permit their leaders and the editors of their papers to go the very limit in trying to break down the morale, discredit railroad managements and destroy the financial credit of the roads. If co-operation means anything it should be quite the reverse of these tactics."

## More About Wages and Rates

A CORRESPONDENT whose good opinion the *Railway Age* greatly desires to enjoy and who frequently has contributed articles to our columns, recently has written us a letter criticising an editorial published in our issue for November 24, entitled "More About How Railway Employees Are Misled." The writer of the letter is a train dispatcher of long experience and unusual ability, and his letter doubtless voices the views of many other railway employees. He says:

"It is stated (in the editorial referred to) that if rates should be reduced most of the reduction should, directly and indirectly, be taken out of the wages of labor because wages are more than twice what they were seven years ago. It is further stated that the *Railway Age* does not contend that a reduction of wages is justified at the present time.

"I am not a labor leader, nor a labor agitator, neither do I want to see government ownership of railroads. What I want to see is fair play all around—live and let live. I have been a reader of your paper for many years, but I am frank to say here of late the fellow who reads between the lines would naturally infer that you are in favor of a reduction of wages for the employees and a boost in wages for the officials.

"My salary now is not more than twice what it was seven years ago, and I am not thoroughly convinced that the wages of the men who operate the railroads by the sweat of the brow are such. Will you be good enough to show me? I am from Missouri."

When the *Railway Age* said that wages in 1923 were more than twice as high as in 1916, it meant that the average wage was more than twice as high. Our correspondent quite reasonably says that he is "from Missouri." Therefore, we will try to "show him."

About nine-tenths of railway wages are paid on an hourly basis. The average wage per hour of all employees paid on an hourly basis in the year 1916 was 27.8 cents. In November, 1923, the average wage of all employees paid on an hourly basis was 61 cents. This was an increase of 120 per cent over the average hourly wage in 1916. Therefore,

at the time our editorial was written, the average hourly wage per employee was more than twice as high as seven years before.

It is well known, however, that the wages of different classes of employees have been increased by somewhat varying percentages. Our correspondent is a train dispatcher. He says that his wages are not more than double what they were seven years before. In 1916, the average wage per hour of train dispatchers and directors was 55.6 cents per hour. In November, 1923, it was \$1.16 per hour. The average increase was 103 per cent.

The classification of employees of the Interstate Commerce Commission has been changed somewhat since 1916. Therefore, it is not possible to make exact comparisons between the wages paid then and now to each class of employees. The following statistics show the increases for some classes of employees for which accurate comparisons can be made:

Employees	Average wage per hour		Percentage increase
	1916	Nov. 1923	
Machinists .....	\$0.41	\$0.77	85
Blacksmiths .....	.39.3	.77	96
Road freight conductors .....	.50	.91	82
Road freight brakemen and flagmen .....	.33½	.71	112
Road freight engineers and motormen .....	.61	1.10	80
Road freight firemen and helpers .....	.39	.88	126
Road passenger conductors .....	.71	1.14	61
Road passenger brakemen and flagmen .....	.40	.80	100
Road passenger engineers and motormen .....	.90	1.37	52
Road passenger firemen and helpers .....	.56	1.05	88

Because of the changes in classification, it is not possible to compare exactly the wages of car men. In 1916, however, the average wage of car inspectors was 24.7 cents and of car repairers 28.4 cents. In November, 1923, the average wage of all car men was 68 cents. This was an increase of 140 per cent over the average wage of car repairers in 1916 and of 175 per cent over that of car inspectors.

The average wage per day of all employees paid on a daily basis in 1916 was \$3.04, while in November, 1923, it was \$7.91, an increase of 160 per cent. This large increase was not due to increases in the compensation of officers, because in 1916 the average compensation of all division and general officers was \$9.92 a day and in November, 1923, it was \$17.10, an increase of only 72 per cent.

Our correspondent might answer that the foregoing statistics do not correctly indicate the increase in the weekly or monthly earnings of employees. He would be correct. The average earnings of all employees in the year 1916 were \$892.00, or \$74.33 a month. In the twelve months ended with November, 1923, they were \$1,626.00, or \$135.55, an increase of only 82 per cent. But this apparent discrepancy between the earnings per day and per hour, on the one hand, and the earnings per month, on the other hand, is entirely due to the fact that the average number of hours worked per day and per month by a great majority of the employees has been substantially reduced.

The employees sought these reductions of hours. Presumably they are of as much value to them as a corresponding increase in wages would have been. On the other hand, the reductions in hours of work have increased the amount of wages the railways must pay by making it necessary for them to employ more men. In consequence for every one thousand tons the railways hauled one mile in 1916, they paid out \$3.10 in wages, while for every one thousand tons they hauled one mile in 1923, they paid out \$6.10 in wages, or almost exactly twice as much.

The foregoing are the facts about wages. What are the facts about railway profits? They are that in 1923 the railways earned less net operating income than in 1916, although meantime there had been invested about four billion dollars of additional capital in their properties. What are the facts about rates? They average only about 55 per cent higher than in 1916, and yet a powerful agitation for their reduction is being carried on. Are railway employees, whose wages have been advanced twice as much in proportion as the rates, helping to combat the agitation for reduction of rates?

On the contrary, the leaders of most of their labor unions are participating in the agitation for reductions of rates, and not only are the members of the unions permitting them to do this, but many of the employees are even actively helping them in doing it.

Our correspondent need not "read between the lines" to learn the policy of the *Railway Age* regarding either wages or rates. This paper is not, at the present time, in favor of either a reduction of the wages of the employees, or of rates. We do not believe that either are too high under present conditions. But, if present wages on the railways, in the coal mines and in manufacturing industries are reasonable, then so are present railway rates, because it is the prevailing wages that make the prevailing rates necessary. On the other hand, if the present rates can be held unreasonable, then it must follow that the present wages, which make the rates necessary, are unreasonable. Consequently if and when present rates are reduced there should, and no doubt will, be a movement started to reduce railway wages; and in that event the *Railway Age* will certainly advocate reductions of wages.

We will be glad if our correspondent, or any other railway employee, will point out any inconsistency or unfairness in this attitude and policy. The inconsistency and unfairness is in the attitude and policy of those labor leaders and railway employees who help carry on propaganda for reductions of rates, who help elect to public office men who advocate them, and who then express dissatisfaction and resentment because the *Railway Age* and others point out that present wages make necessary present rates and that, therefore, the wages and rates should and must stand or fall together.

## Railroads and Other Industries

THE RAILROAD MAN who is called upon to defend his industry against its enemies is fortunate in having at his disposal facts and figures compiled by disinterested and able persons which are sufficient to justify a most enthusiastic attitude regarding the efficiency and accomplishment of his industry. Detailed statistics of railroad performance have, under the policy of regulation by the Interstate Commerce Commission, been public property for many years and efforts to improve these statistics have been long, continuous and fruitful. Of late years the ascertainment of further valuable information concerning railroad performance has been carried forward by the railways themselves working through the Bureau of Railway Economics and the Car Service Division of the American Railway Association. The statistics so compiled have been of the greatest value in comparing performance by years and by companies within the railway industry. Not a great deal, however, has thus far been done toward comparing the railways with other industries. This is a difficult task, first, because the dissimilarity of various industries makes many comparisons impossible and, second, because it is impossible to secure data about most industries in the same detail as it is obtainable from the railways. That comparison with other industries is desirable, however, cannot be doubted.

The policies, methods, and many specific details of railroad administration are severely circumscribed by the government. The American people have taken from the railroads the power of initiative in many of their activities. Have they, in return for these severe restrictions, given the railroads any compensating advantages? How do the earnings of the restricted railroads compare with those of unrestricted industry? Have the railroads by comparatively high efficiency shown themselves entitled to consideration at the hands of the government to assure to them rewards comparable to those gained by unrestricted industry in the natural functioning of competitive enterprise? These are fair questions, the answers to which railroad men and the public

should have. It is gratifying, therefore, to see in the first research report of the National Transportation Institute a beginning in the work of showing the place of the railroads in the economic life of the country. This report, an abstract of which appeared in the *Railway Age* of January 26, shows, relative to the increase of railroad efficiency, that in 1920 railroad investment per ton-mile was only \$.66 as against \$1 in 1900, whereas the manufacturing industry utilized \$2.13 of capital per unit of output in 1920 as against \$1 twenty years previously. The report also shows a great improvement in railroad ton-mile performance per employee. If the first report of the Institute is indicative of the kind of material which it will issue in the future, railroad and business men will find it decidedly to their advantage to secure copies of these reports and to study them thoroughly.

## Books and Special Articles of Interest to Railroaders

(Compiled by Elizabeth Cullen, Reference Librarian, Bureau of Railway Economics, Washington, D. C.)

### Books and Pamphlets

*The Development of National Administrative Organization in the United States*, by Lloyd Milton Short. History of each government department, commission, etc., and their respective significance. Interstate Commerce Commission, p. 420, U. S. Railroad Administration, p. 435, 446, Railroad Labor Board, p. 436. Administrative organizations proposed, p. 459-470. A study in administration of the Institute for Government Research. 514 p. Published by Johns Hopkins Press, Baltimore, Md. \$5.00.

*Methods of Merchandising American Wheat in the Export Trade. Part I. Buying Wheat for Export*, by Theo. D. Hammatt. U. S. Dept. of Commerce Trade Information Bulletin No. 183. Wheat traffic flows by rail and rail and water, buying methods, grain handling at points of shipment, p. 5-29, 74 p. Published by Govt. Print. Off., Washington. *Gratis* from Dept. of Commerce.

*Movement of Products of Northwest Pacific States*. Letter from the Chairman of the Interstate Commerce Commission transmitting a report concerning the adequacy of transportation facilities in 1922 . . . (in compliance with Senate Res. No. 414 of Jan. 20, 1923). Pamphlet form of report of which abstracts were recently printed in the *Age*. 68th Cong., 1st sess. Senate Doc. No. 35. 28 p. Published by Govt. Print. Off., Washington.

*The Railroad Fist; or, Caswell System, a Treatise in the Expert Rapidity of Handwriting*, by Guy Rich Caswell. Penmanship requirements of some branches of railroad service, and how to attain them. 100 p. Published by Author, Jamestown, North Dakota.

### Periodical Articles

*Between the Producer and the Consumer the Spread of Prices Is the Foundation of Our Civilization*, by R. Estcourt. "If railway freightage were provided gratuitously the main problem (of the spread) would be little affected." P. 215, col. 1, *Annalist*, February 11, 1924, p. 215-216, 220.

*Railroad Consolidation*, by Herbert Hoover. Reasons for consolidations. *Saturday Evening Post*, February 9, 1924, p. 6-7, 137.

*Two Important Railroad Decisions. Supreme Court Says Substantially That Congress Can Go as Far as It Likes—Commission Holds to Its Guns on Valuation*, by Aaron Hardy Ulm. The Dayton-Goose Creek decision, and the Commission's reply to petition of National Conference on Valuation of Railroads. *Barron's*, February 11, 1924, p. 12.

## Letters to the Editor

[The RAILWAY AGE welcomes letters from its readers and especially those containing constructive suggestions for improvements in the railway field. Short letters—about 250 words—are particularly appreciated. The editors do not hold themselves responsible for facts or opinions expressed.]

## Hon. Robin Hood— Exclusive Interview

NEW YORK.

TO THE EDITOR:

As I was walking down Pennsylvania avenue, imagine my surprise at seeing my old friend Robin Hood. He was dressed like a Congressman, but there was no mistaking the roguish twinkle in his eye, and he could not help being conspicuous for you could see he was a man of courage.

"Why, bless my soul, Robin," said I, "the last time I saw you was in Sherwood Forest. What on earth are you doing here?"

"Well, to tell the truth," said he, with a wink, "I found that a man of my principles could do better here."

"Your principles have always fascinated me from my childhood," I said, "but what particular principle have you in mind?"

"Why, the old one of taking from the rich and giving to the poor," answered the gallant woodsman. "The poor have always liked it, and they have a good majority everywhere. Without vanity, I may say that politically I am doing very well. Instead of being insulted with the name of 'robber' here I am called a 'Progressive.'"

"So far as I can see," said I, "your principles have not made much impression on the laws."

This made Robin rather warm, and he answered quickly, "You surely have forgotten about the Transportation Act."

"How so?" said I.

The banished Earl of Huntingdon at once reminded me of the provision that out of the net earnings of the rich railroads over and above the usual rate of interest, one-half was to be forcibly taken from them by the government, to be lent to the poor railroads. "It isn't regular robbery," he explained to me, "it is just recapture of excess earnings."

"Why are the earnings called excess?" said I.

"Because they are more than a bare living," said he.

My answer was, "You are not giving the money to the poor railroads at all, you are only lending it to them."

This would abash him, it seemed to me, but not so. "I suppose that is a great comfort to the rich railroads," said he. "And you don't suppose they are really going to pay it back, do you?" he went on with a slight air of contempt. "If they could pay it back, they would not have to borrow from the government. Anybody would lend them the money. All they have to do at the end of the adventure is to hand the railroad over to the government, and say, 'Take this and God help you!'"

"What would the government do with the railroad?" said I.

Robin thought that the Interstate Commerce Commission could use it for a rate-base.

Perhaps I didn't look entirely satisfied, so he went on, "In Sherwood Forest we always saved the feelings of the poor by calling any little donation a loan." What a fine, generous fellow Robin always was! And that isn't all.

Before I left, he told me that the government was going to make similar loans to other poor people, voters in modest circumstances, taking the money from the rich by taxes. The prospect of laws of this kind, Robin thought, was especially good at this time, with a presidential election coming on. As for himself, he said he was making more than he had ever done in Sherwood Forest, and he had never cared for regular business anyway. Marian liked staying at a hotel, and Washington was really an ideal place for a man of his tastes.

Parting, I wrung his hand warmly, for it occurred to me that I might have need for one of the "loans" he spoke of. Indeed I broached the subject as gently as I could, but he seemed to lose interest in it when he found out that I was not living in a doubtful state.

B. L.

## Prompt Settlement of Freight Overcharges

NASHVILLE, Tenn.

### TO THE EDITOR:

Being struck with the statement in a recent issue of the *Railway Age* that railroads should voucher overcharge claims the day they were presented, I asked about our practice in this matter. A. P. Ottarson, controller, advises that such claims cannot be paid the day they are presented without maintaining what he calls an extravagantly wasteful excess of clerical help. I believe that you and readers of the *Railway Age* will be interested in his memorandum, which also shows that almost all claims are actually handled within less than two weeks. He says:

"It is possible, of course, to voucher overcharge claims to a very great extent on the date of their receipt, but, as claims do not come in with regularity and we cannot control their inflow for the simple reason that they are submitted by shippers independent of our influence and authority, it would be extravagantly wasteful of clerical help to endeavor to voucher claims within less than a week or ten days after their receipt. We can pass them through the usual routine keeping enough work ahead to keep our forces engaged at all times and avoid wasteful idleness, and voucher ninety per cent or more of our claims within ten days or two weeks and this, as a matter of record, we are actually doing. Beginning with January 2, for instance, all the overcharge claims we vouchered on that day were filed within ten days previous thereto with but two exceptions. One of these was a claim filed October 26 on which there was a lack of clearness as to the tariff, and we had to consult our connections as to the rates to apply. Another was filed on November 6 and we were compelled to handle in the same manner as our tariffs did not show the rates applying over connecting lines. On January 3 we vouchered 21 claims and only one was filed with us prior to December 18 and that one was filed on December 7. On January 4, 5 and 7, we vouchered 38 claims. All of them were filed late in December with the exception of one filed October 12 on which there was some complication with the agent's account; one filed November 27 which had to be investigated with connections; one filed October 6 which had to be handled by the general freight agent with connecting lines for rates; one was filed November 21 and involved a question of mis-routing and had to be taken up with connections before we could legally pay the claim. On the 8th, 9th and 10th, we vouchered 58 claims and all of them had been filed within two weeks prior thereto, except six which involved carload weight which had to be investigated by the Southern Weighing and Inspection Bureau. On the 12th we vouchered 18 claims and all of them had been filed within two weeks and 80 per cent had

been filed within one week. On the 14th we vouchered 17 overcharge claims and only one was filed earlier than January 8, so that with this one exception all the claims vouchered on that day were handled from start to finish within a period of one week."

ROBERT S. HENRY,

Director of Public Relations,  
Nashville, Chattanooga & St. Louis.

[The editorial note to which Mr. Henry refers was published November 17, page 893. Its main purpose was to urge claim departments to settle claims in less than sixty days, where possible to do so. It is good to know that the Nashville, Chattanooga & St. Louis is doing considerably better than that, thus tending to justify the position that we took. It is proper to observe, however, that vouchering a claim is not the same thing as paying it. The opening sentence of Mr. Henry's letter does not quote the editorial with precise accuracy. What we said was: "An overcharge on freight ought to be settled within from one to ten days, except in a very small percentage of cases. The only excuse that a railroad can have for taking a longer time—say two or three months—to settle such claims is in the bigness of its clerical machine. Within limits, this excuse is reasonable."

—EDITOR.]

## Do Railroads Always Hire the Best Men?

PORTLAND, Oregon.

### TO THE EDITOR:

It is the desire of railroads to hire the best men possible; it pays them to do it. Unfortunately, however, railroads employ numerous men who do not belong in railroad service. Why is this? Surely, such men are an expense to a railroad. These men are only interested in doing the least possible for their money.

The trouble is caused by nothing more, nothing less, than the restrictive barriers placed between a man desiring a job and the objective. Every day it is becoming more difficult for a good man to secure a job on a railroad.

Some roads, goaded by the expense of their hospital associations, have placed the physical requirement barrier so high, that many valuable men are unable to obtain employment. A railroad carrying a heavy pension list may adopt an absurd age limit for some classes of new employees.

Take for example a young man 28 years old, who desires to get a job as locomotive fireman out of Portland, Oregon. He is physically fit, except that he was operated on for appendicitis some years ago. The young man is ambitious, he has tried other trades and has at last found that his heart is with the steam locomotive. If he gets the job he will settle down and make the railroad a valuable employee.

Imagine the young man's chagrin when the X. Y. & Z. master mechanic tells him he is too old to be a fireman, the road's age limit being 25 for inexperienced firemen. Keenly disappointed the young man investigates further; he finds that if he will work six months on some other road, the X. Y. & Z. would hire him, even if 35 years old. He also finds the road's medical requirements are more reasonable than its age limit. A man may pass the doctor with an operation scar on his abdomen by signing a release. (This is the only fair way of handling such cases.)

When our young man finds that he is barred from employment on the X. Y. & Z. he goes over to the A. B. & C. He is immediately employed; and he finds that the A. B. & C. hires men much older than himself for firemen. The A. B. & C. people do not believe in freak age limits. He takes the

slip handed to him by the employing officer and light-heartedly hurries to the doctor's office. This happiness is short lived, however; the doctor gives a quick glance at the scar on his abdomen and turns him down.

He finds the A. B. & C. medical requirements are so strict that only the most physically perfect men can pass it. No one is allowed to sign a release, even if physically fit, after having a serious operation.

So, discouraged, our young man finds he is barred from employment on the second road by its medical requirements, of doubtful reasonableness; and barred from the other one by an age limit that is very questionable.

The young man here mentioned is not a product of fiction. The above incidents were related to me by the man himself, and I am in a position to know he was telling the truth. There are countless others just like him, who would make the railroads valuable employees.

Where all of this will end I don't know, but I'm sure if railroad operating officers could actually see the damage caused, in dollars and cents, they would be more reasonable with their physical requirements and age limits. Of course, it is necessary to have these regulations, but for the sake of the thousands of men that will hire out in the future, railroad officials should arouse themselves to the situation; be reasonable and use common sense!

LOCOMOTIVE ENGINEER.

## The Art of Buying

CHICAGO.

TO THE EDITOR:

In these days of reconstruction, when all precedents seem to have been shattered and business executives are filled with doubt and uncertainty as to the proper course to pursue, it is imperative that each department of a great business be handled in the most economical manner, and a system of co-ordination maintained which shall preclude the possibility of loss, waste, or overlapping effort.

The first great requisite in the mind of the executive, naturally, is the sales department in which the highest ability is demanded and the cost of such ability is reckoned as a legitimate and necessary expense and ungrudgingly paid if the desired results are obtained.

Advertising is another great expense which is cheerfully shouldered as a safe and sane investment which brings great returns.

High salaried department managers, skilled labor, up-to-date machinery and labor-saving devices are also included in the same category, as very necessary to the economical conduct of any business, and rightly so, and any retrenchment in these lines is ordered with a hesitant feeling and only after mature deliberation, or as a last resort.

But when a business lull arrives the first department to receive attention is the one in which money is spent, the purchasing department. The edict goes out—"Stop all purchases—Buy nothing without special permission," an order which very often means a substantial loss to the company, which, however, may not be so apparent as many smaller losses but is harmful to the business in the annual balance sheet. For in such times bargains are to be had and investments in non-deteriorating materials for future use may result in large savings.

A purchasing department if not properly administered may mean to any business just the difference in that balance sheet between a profit and a loss and deserves the close scrutiny and deep analysis of the chief executive to a much greater extent than do other departments. You cannot "keep a full sack with a rent in the bottom" and several depart-

ments may be producing the money while this one may be wasting it.

The purchasing department should be in charge of a mature executive, trained for many years in the line, who knows material, its uses, its intrinsic value, its origin, and its preparation. He must be a judge of quality, of markets, of men, of conditions, at times a good conversationalist, a thoughtful listener, a good mixer to a certain degree, and have the faculty of making and keeping friends, for the gruff-spoken, impolite, always-too-busy-to-see-or-listen kind of a buyer, is not the man who gets the special prices or preferences which are very often obtainable. The selling fraternity is quick to appraise him and not slow to express its disapproval of him among the clan. If he has not all of these attributes he will not measure up to the full stature of a really competent purchasing agent and the company will fall far short of getting the service it should get in this most important department.

In addition to all of these very necessary attributes if he can boast of a few years of selling experience he has without doubt a very greatly increased value as a buyer as he knows the sellers' problems and methods and much about costs and comparative values, which information he would not otherwise be permitted to obtain.

The art of spending money, and assuredly it is an art, requires concentrated, painstaking effort, long study, and clear perception; while anyone may do it, the education necessary properly to qualify a man for this serious work may cost, and has cost, many organizations vast sums if figures on such costs were available.

It is wholly within reason to assert that even fairly competent buyers may, in the course of a year, where their purchases run into many millions in volume, unknowingly lose for their organization a hundred thousand dollars or more without such loss being apparent or capable of analysis. Nor need said buyer have any consciousness of any such condition or any feeling of dereliction of duty; when such things are possible the business of buying is without doubt an art and the finished purchasing agent an artist.

The question of compensation for this class of officials should be a secondary consideration as the right man in the place will save his annual salary every month by judicious exercise of the qualities enumerated, and the wrong man or the man not qualified by temperament, training, or education, or the man with a flexible conscience, will be a liability at any price.

The purchasing agent who really gets results must not be hampered by detail work, statement making, voucher or check signing, but must be free at all times to follow up the materials he has purchased, ascertain if they meet every requirement. This should be done through a well organized inspection department which must be under his supervision, as he is the only person who knows what has been purchased, for in countless instances slightly inferior material will not be reported to him, and serious leaks will be allowed to develop. He must investigate sources of supply, keep posted on markets, methods, and costs of production and where his material is intended for resale observe its effect on the trade for his future guidance. He must be given sufficient assistance in the way of office help to enable him to keep his records complete and develop others for his work, for the really broad man will not be afraid of being superseded by his subordinates.

Qualifications such as these are possessed by few men and the official who has them, or realizes the need of them, and strives with any great degree of success to reach such perfection, is an asset to an organization which will do much toward keeping the business on an even keel and the red figures off the balance sheet.

O. D. BRIGHAM,  
President, Central Railway Supply Company.



Left to Right--A. Franklin (Boilermakers), J. M. Burns (Sheet Metal Workers), T. Healy (Firemen and Oilers), B. M. Jewell (Chairman), J. Kline (Blacksmiths), M. Ryan (Carmen), W. H. Johnston (Machinists), and J. P. Noonan (Electrical Workers)—Photo from Underwood and P. & A.

## Railroad Shop Crafts Promote Co-operation

Six Organizations Formally Endorse Program Which Has Been Developed at Glenwood Shops on B. & O.

WASHINGTON, D. C.

**A**T THE MEETING of Section No. 2, Executive Council, Railway Employees' Department, American Federation of Labor, held last week, the co-operative program which the International Association of Machinists in collaboration with Baltimore & Ohio System Federation No. 30 and the Baltimore & Ohio management has been furthering, was adopted as the official program of the six international railroad shop craft unions composing Section No. 2. These unions are the International Association of Machinists; the



Captain O. S. Beyer, Jr.

International Brotherhood of Boilermakers, Iron Ship Builders and Helpers of America; the International Brotherhood of Blacksmiths, Drop Forgers and Helpers; the Amalgamated Sheet Metal Workers' International Alliance; the Brotherhood of Railway Carmen of America, and the International Brotherhood of Electrical Workers.

This official action of the standard railroad shop crafts came as the result of the developments on the Baltimore & Ohio, which have been quietly

under way since February of last year. The policy involved, from the unions' point of view, has been subject to very critical scrutiny inside of union circles for the last year, so that the action in question is all the more significant. The vitality of the program, incidentally, has been greatly stimulated by the keen interest which other railroads, both in the United States and Canada, having contractual relations with the international shop craft unions, have manifested in the idea of genuine co-operation.

At the Executive Council meeting referred to, final arrangements were made to retain Captain O. S. Beyer, Jr., consulting engineer of New York, to further intensify the shop crafts' part in the program of co-operation on those roads which care to avail themselves of his and the unions' services. It was Captain Beyer who, as the engineering representative of the Machinists and the Baltimore & Ohio System Federation, in collaboration with the Baltimore & Ohio management, brought about the developments in co-operation on that railroad.

Captain Beyer is well known in the railway mechanical field. He was graduated from Stevens Institute of Technology in 1907. He served his apprenticeship as machinist, draftsman and engineer with the E. W. Bliss Company of Brooklyn, the Midvale Steel Company of Philadelphia and the Erie Railroad. He was advanced to the position of special motive power engineer on the staff of the mechanical superintendent of the Erie Railroad and later went with the Chicago, Rock Island & Pacific in the same capacity. He was anxious, however, to develop experience in the administrative side of the business and was transferred to the Rock Island district repair shops at Horton, Kan., in the capacity of general foreman. He left railroad service in 1916 to take charge of the railroad engineering experiment work and the locomotive testing laboratory at the University of Illinois. When this country entered the war he assisted in the organization of the United States School of Military Aeronautics at Urbana. During the latter part of 1917 he entered the army with the rank of captain, to organize and train the technical personnel for railway and heavy artillery maintenance, and eventually to direct all technical training of the ordnance personnel. At the close of the war he was placed in charge of the Arsenal Orders Section of the Army Ordnance Department, which had been created at the request of the organized employees of the arsenals. It was here that he saw the possibilities of co-operation with the workers in increasing the productive efficiency at the arsenals. Since leaving the army he has practiced as a consulting engineer, devoting most of his time as a technical advisor to the unions representing the skilled crafts in government and railroad service.

Upon inquiry it has been ascertained that the program of co-operation as conceived by the officers of the shop craft unions in question, contemplates some interesting and constructive developments in the human relations of the railroad industry. Briefly these may be summarized as follows:

The recognition by railroad management of the constructive possibilities and functions of the national shop craft organizations in relation to the railroad industry, in addition to the usual protective functions of these unions.

On the basis of this recognition and the unions' readiness, willingness and ability to function constructively, the development of interest in and responsibility for better shop service, improved methods of operation, increased production, reduced waste, greater safety and higher morale, all to be accomplished collectively through shop committeemen, local lodges, shop federations, councils of system craft officers, system federations and general officers of the unions involved.

The development of periodic joint conferences between

local management officers, such as master mechanics, superintendents of shops, their supervisory staffs and the regularly functioning local federated committees of the crafts concerned. These regular local conferences to be supplemented from time to time by occasional and eventually regular conferences between the chief mechanical department officers and the system officers or general chairmen of the federated crafts.

The subjects to be considered at these local and system conferences are not to be grievances, working rules and wages, but rather ways and means for bettering maintenance services, output, quality of work, employee recruiting and training, stabilization of employment and morale. The adjustment of grievances, rules and wage matters, it is intended, shall be handled precisely as they always have been in the past.

The development of a general understanding by all concerned, union men, union officers and railroad officers, of the relation between labor costs, wage rates, continuity of work, and productivity, so that the gains resulting from co-operation will be determined and properly taken into consideration in future wage adjustments. A typical formula recognizing this understanding, for example, is the following one:

The welfare of the Baltimore & Ohio Railroad and its employees is dependent on the service which the railroad renders the public. Improvements in this service and economy in operating and maintenance expenses result chiefly from willing co-operation between the railroad management and the voluntary organizations of its employees.

When groups responsible for better service and greater efficiency share fairly in the benefits which follow their joint efforts, improvements in the conduct of the railroads are greatly encouraged. The parties to this agreement recognize the foregoing principles and agree to be governed by them in their relations.

The development of a program of employment stabilization based upon (1) railroad work in railroad shops consistent with railroad shops' ability to do such work more economically, better or quicker than can be done elsewhere, and (2) creation of maintenance reserves and a system of yearly budgeting of maintenance expenditures so as to avoid sudden, violent and wasteful fluctuations in production and employment.

The establishment of employee service clearance centers, whereby employees of the normal working force who are temporarily idle at one or more points, can be utilized elsewhere so that the railroads will not lose their investment in the training and adaptation of these employees and facilities, and so that employees will see that really sincere efforts are being made to give substance to a program of employment stabilization.

The development of improved employment methods, whereby the co-operating railroads will receive their share of the most skilled and competent mechanics available.

The development of improved methods for recruiting, educating and training of apprentices.

TAX-EXEMPT SECURITIES now extant aggregate more than \$12,000,000,000. The attractiveness of such investment has caused railway investment to appear unattractive by comparison. To the extent that the ready sale of tax-exempt securities encourages civic extravagance, it increases taxation in general and tends to saddle undue burdens upon the public; it prevents the railroads from getting new capital and installing the modern facilities that increase efficiency and make possible reduction of rates. A way must be found to change the channel of investment of owners of large incomes from tax-exempt securities into productive enterprises. Let us not make the mistake of injuring all classes of our people by trying to punish one class.—*Central of Georgia Circular.*

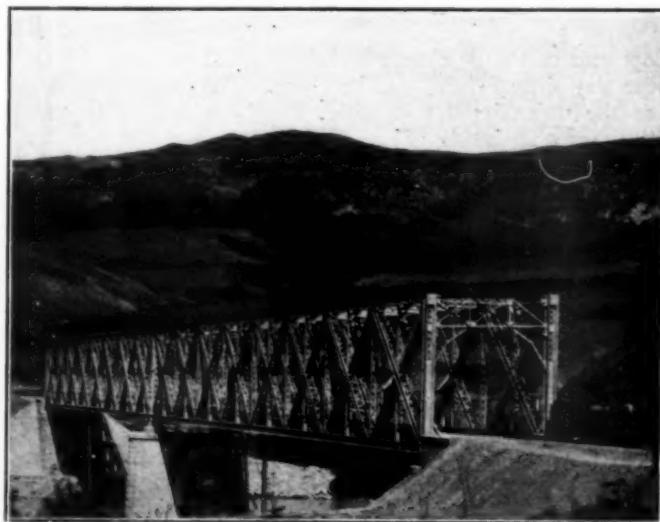
## Freight Car Loading

WASHINGTON, D. C.

**R**EVENUE FREIGHT CAR LOADING during the week ended February 2 continued to break all previous records for this time of the year. The total was 929,936, an increase of 64,522 cars as compared with the corresponding week of last year and of 182,041 as compared with 1922. Last year the 900,000 mark was not crossed until about the first of March. As compared with last year increases were shown in the loading of all classes of commodities except coke and ore. Grain and grain products was especially heavy, the total being 53,645 cars, an increase of 11,950, while forest products showed an increase of 10,335, merchandise an increase of 19,523 and miscellaneous freight an increase of 16,249 cars. In the Allegheny district, however, the loading was less than it was in the corresponding week of last year. The summary of the weekly report compiled by the Car Service Division of the American Railway Association follows:

REVENUE FREIGHT CAR LOADING			
Week Ended Saturday, February 2, 1924			
Districts:	1924	1923	1922
Eastern .....	228,513	208,256	190,898
Allegheny .....	187,169	187,971	152,832
Pocahontas .....	40,698	33,757	32,749
Southern .....	144,076	138,159	112,633
Northwestern .....	123,865	114,241	92,602
Central Western .....	143,054	130,640	117,036
Southwestern .....	62,561	52,390	49,145
Total Western Districts .....	329,480	297,271	258,783
Commodities:			
Grain and grain products .....	53,645	41,695	48,276
Live stock .....	33,246	32,868	27,948
Coal .....	198,953	190,425	184,298
Coke .....	12,507	14,187	7,898
Forest products .....	80,132	69,797	49,717
Ore .....	9,506	10,269	3,948
Merchandise L. C. L. ....	235,979	216,456	217,106
Miscellaneous .....	305,966	289,717	208,704
Total .....	929,936	865,414	747,895
January 26 .....	891,326	869,464	740,386
January 19 .....	893,276	864,297	731,109
January 12 .....	872,265	872,908	714,191
January 5 .....	703,269	767,296	599,433
Cumulative loading to date .....	4,292,072	4,239,379	3,533,014

With the increase in car loading there has naturally been a reduction in the large surplus of freight cars. For the period ended January 31 the average surplus was 169,036, a decrease of 76,138 as compared with the previous period. This included 74,415 box cars, 67,578 coal cars, 14,543 stock cars and 7,769 refrigerator cars. Car shortages were reported to the amount of 4,598.



A Bridge on the Anatolian Railway

# The Railroad Question—A Test of Democracy\*

## Outcome of Present Struggle May Largely Determine Future of Property and Business in This Country

By Samuel O. Dunn  
Editor of the *Railway Age*

THE RAILROAD QUESTION is now putting the democratic institutions of this country to the most critical test to which they have been subjected since the slavery question was set at rest by the Civil War. This is a strong statement. Let us consider whether it is not a true statement.

The people of almost every civilized nation are at the present time engaged in a struggle to decide whether they will maintain the system of private ownership and management of property or drift into socialism. Most people in this country are not at present seriously considering whether government ownership of railroads should be adopted. But we are considering whether we shall adopt a policy of railroad regulation which without most people realizing it, is almost as socialistic in its principle and purpose as government ownership itself, and which if adopted almost inevitably would result in government ownership. And the application of that policy to the railroads could hardly fail to result in its application to public utilities and other forms of property. Socialism will have taken the first line trench if the policy of regulation of railways to which I refer shall be adopted.

The danger is due quite as much to public men of conservative principles who may lack courage to stand up for their principles as to men of radical principles who will have courage to stand up for their principles. It may be said that even if Congress should pass radical legislation the courts would nullify it. But recent decisions of the Supreme Court of the United States strongly indicate that it does not hold just the same views regarding the rights of property and what Congress may or may not do respecting them that it formerly did. I believe in being as optimistic as the facts available to human reason warrant. It is worse than foolish to be optimistic in disregard to the facts.

### Britain's Labor Government

Consider what has just occurred in Great Britain. For many years socialistic propaganda has been carried on and socialistic policies have been advocated in that country. But the "hard-headed" British business man remained optimistic. When he took his nose out of his account books long enough to pay these matters the scant tribute of his attention, he was complacently confident the time would never come when the common sense British people would put in power a socialistic government. But recently a labor socialist government has come into power in Great Britain. The prime minister and the members of the British cabinet today, and the powerful minority whose votes elected them to Parliament, favor a huge levy upon all the capital of the country. They favor government ownership of all railroads, public utilities and many industries. They favor government ownership of land. They will not get these things at once of course. Many predict they never will get them. But the same people predicted no socialist government would ever come to power in Great Britain.

When the American farmer joins, as in many parts of the country he recently has joined, with socialistic labor in electing men to Congress who advocate virtual confiscation of railroad property, it is pertinent to call his attention to

the fact that in England where farmers have relatively fewer votes than in this country radical public men are as candid and earnest in advocating government ownership of land as in advocating government ownership of railroads. Great Britain, although it has a king, has a government that is as democratic as ours. How can any man, with what is now taking place in Great Britain before his eyes, regard with complacent optimism the prospective outcome of the widespread advocacy in this country of policies similar to those whose advocacy for years has finally resulted in placing a labor socialist government in power in Great Britain?

### What Is the Real Railroad Question?

Let us for a while disregard all collateral matters, such as the question of railroad consolidation and the question of maintaining the Railroad Labor Board, and inquire what is the real and essential railroad question that is now before the people of the United States. Many think it is a question of freight rates in general. Many think it is a question of freight rates on farm products in particular. Out in the western country that I know best many think it is merely a question of the rates on grain.

The present railroad question is not primarily a question of rates. This point can be made clear by contrasting the policy favored by those who would retain the present rate-making provisions of the Transportation Act with the policy favored by those who would destroy the rate-making provisions.

The Transportation Act requires, as did previous Federal legislation, that all rates must be just and reasonable. It also requires that the rates shall be so fixed as to enable the railways to earn a fair return upon the fair value of their property, but there is nothing new in this, since it merely requires what was previously required by the Federal Constitution as interpreted by the courts. Where the Transportation Act did make an advance over previous legislation was in directing the Interstate Commerce Commission not merely to so fix rates as to enable the railways to earn a fair return, but also, in determining what would be a fair return, to take into consideration the need of the people of the United States for adequate development of their facilities of transportation. That requirement was put in the law because it had been proved to Congress beyond question that a return to the policy of regulating rates which had prevailed before the war would prevent in future, as the same policy had before the war prevented, an adequate increase in facilities of transportation.

That provision is constructive because it contemplates, not merely a policy of regulation which would restrict the net earnings of the railways to the lowest level that the courts would permit regardless of the effect that would be produced upon the quality and amount of transportation that could be furnished, but because it requires the regulating authority always in fixing rates to have due regard to the effect that will be produced upon the quality and amount of transportation service that can be furnished.

Now, those who are advocating repeal of the rate-making provisions of the Transportation Act are advocating not merely legislation which might or would bring about reduc-

\*Address before the Transportation Club of Louisville, at Louisville, Ky., on January 29.

tions of rates, but legislation which would have the effect of withdrawing from the Interstate Commerce Commission the mandate always to bear in mind in regulating rates that they should be so fixed as to assure to the public the provision of adequate means of transportation.

Thus we see the present railroad question is not merely, or even mainly, a question of rates, but is in a much more important measure a question of the transportation facilities and service that the railways will be given opportunity to provide.

Furthermore, it is much more than even a question of railroad rates and railroad service. It is easily possible to understand and sympathize with the point of view of the wheat farmer, who is discontented because of the low price of his product, and even to agree with him and his spokesman that if possible a readjustment of freight rates, and of other conditions by which he is affected, should be made to give him all practicable relief from the ruthless operation of the law of supply and demand from which he is suffering. But the plain fact is that nine-tenths of the radicals who are advocating reductions of freight rates ostensibly to give relief to the wheat farmers and other classes are advocating them for an entirely different purpose. This can be proved to any reasonable man merely by citing the method by which they propose bringing about reductions of rates.

#### Reasons for Present Rates

Railroad rates at present are about 50 per cent higher than they were eight years ago when they had declined to the lowest level ever reached. Why are they still so much higher than then? Any man who does not know the answer is inexcusably ignorant. They are not and have not been kept up to increase railway profits, nor have the advances in them had that result. All the advances in rates have been made since 1916 and from the advances in rates the railway companies have never derived a cent of profit. The proof of this is the simple fact that in every year since 1916 the railway companies have earned and received a smaller net return than they did in that year. Railroad rates are kept on their present level because the wage per hour of railway employees, the price of coal per ton, the prices of material and supplies bought by the railways and railway taxes are twice as high as before any rates were advanced. The railways in 1923 paid out 85 per cent of their total earnings to meet operating expenses and taxes. Their properties represented an investment four billion dollars greater than in 1916, and yet the net operating income earned by them was less than in 1916.

In view of these indisputable facts a reasonable man would expect to find that those who advocate reductions of rates would also advocate, as means of bringing them about, the reduction of those costs the increase of which has made the higher rates necessary.

This brings us to the most significant feature of all this propaganda for reduction of rates which is being carried on by politicians and labor leaders—the feature that stamps upon it plainly and indelibly its true character and purpose. Of all the men of the classes mentioned who are advocating reductions of rates, not one has ever yet said a word in favor of the reduction of the wages of railway employees. The increases in the wages of employees between 1916 and 1923 took 57 cents out of every dollar of the increase in railway earnings due both to the growth of traffic and the advances in rates, but neither Senator La Follette, nor Senator Brookhart, nor Senator Norris, nor Senator Capper, nor W. G. McAdoo, nor any other public man who says railroad rates ought to be reduced to relieve the farmers, ever yet has intimated that to make lower rates possible the wages of railway employees should be reduced. Furthermore, while many of these men have intimated that the prices the railways are paying for coal and for materials and supplies are excessive, not one of

them ever has even hinted that the high wages of coal miners and of employees of manufactories, to which are chiefly due these high prices, should be reduced.

Now, I am not advocating reduction of wages on the railways, in the coal mines or in factories. But in dealing with a great question like the railroad question the actual facts should be ascertained and stated and the problems should be solved on the basis of these facts. On no other basis can any problem be correctly solved, and the facts are that the difference between the railway rates of 1916 and of 1924 is due almost entirely to the difference between the wages prevailing on the railways and in other large industries in these years.

In addition, although the taxes of the railways have been more than doubled, no radical public man or labor leader has yet been heard to raise his voice in favor of the reduction of railway taxes.

Their silence regarding these matters makes unavoidable the conclusion that they believe all railway expenses and taxes should be left as they are, or even increased, except insofar as economies may be effected by more efficient operation.

How, then, do they propose to bring about a reduction of rates? They are unanimous in advocating bringing it about by measures which would reduce and limit the net operating income that the railways may earn with which to pay interest and dividends. In other words, they do not intend to touch those parts of railway expenditure which have been doubled, but to bring about reduction of rates entirely by reducing the only part of railway income which already has been reduced.

There are two points regarding this part of their program which are of the greatest significance. I said a moment ago that a large majority of the public men and labor leaders who are advocating reduction of rates are not advocating them, as they pretend to be, for the purpose of giving relief to farmers and other persons who pay freight rates. Their own program is the proof of this statement. The net operating income of the railways in 1923 amounted to only 15 per cent of their total earnings. In other words, the railway companies, on behalf of the owners of their stocks and bonds, got and kept the revenue from only 15 per cent of the rates charged. These radical public men and labor leaders have no plan to offer, or at least have offered no plan, to effect reduction of rates except by a reduction of substantially one-third in the valuation of the railroads and of the net operating income they may earn on it. Therefore, the adoption of the scheme they advocate would result in an average reduction in rates of not more than 5 per cent. It would make possible a reduction in freight rates, if it were all taken out of freight rates, of not more than 7 per cent. That is what adoption of the radical measures they advocate would amount to from the standpoint of those who pay the rates.

#### Significance of Radical Program

Let us now look at the matter from the standpoint of the railway companies. While the reduction of the rates that the public pays would average no more than 5 per cent, the reduction in the net operating income of the railway companies and in the amount of interest and dividends they could pay to their security owners would be at least 33 1/3 per cent. The result would be that the return the railways were allowed to earn would be reduced to relatively less than it has been in any year since complete statistics have been kept, except in one year following the panic of 1893 and in 1921. Furthermore, this reduction in what the railways are allowed to earn on the present investment in their properties is not to be temporary. It is to be permanent. The result would be to bankrupt most of the railroad companies and absolutely stop investment in railroads and the expansion of their properties.

Any man who has studied the literature of socialism will

at once recognize this proposed regulation of the railways as socialistic to its very core. The fundamental principle of socialism is that labor creates all wealth and that all return derived from invested capital is robbery. The scheme of regulation I am analyzing contemplates that nothing shall be directly or indirectly taken away from labor in order to reduce rates, but that one-third of the return to which the Interstate Commerce Commission has held the capital invested in railroads is entitled shall be taken from it. Now, this may be economically and morally right, or it may be economically and morally wrong. But the true character and purpose of the proposal at least should not be mistaken. It is not an honest plan to bring about a substantial reduction of rates, but a socialistic plan to despoil to as great extent as may be possible at present those who have invested their capital in railroads.

Any man who doubts this statement will have his doubt greatly reduced if he will but consider the fact that this policy of regulation of railways is being advocated not only by public men and labor leaders of a socialistic tendency, but is receiving the support of every avowed socialist and communist in this country. These men recognize the tendency of this proposed policy of regulation of railways, whether business men and farmers do or not. They know that adoption of this policy would make private ownership of railroads impossible and government ownership unavoidable, whether business men and farmers know it or not. And there is this to be said for the intelligence of the socialist and communist agitators, whose propaganda is honeycombing the public sentiment of this country. They, unlike most business men and farmers, discern the tendency of every piece of legislation which is proposed, and always oppose legislation they know will hinder their cause and support legislation they know will help their cause. Unlike many business men they do not devote themselves so exclusively to their own selfish affairs and immediate interests that they have no time or energy left to use in studying currents of opinion and in promoting the cause whose ultimate triumph they desire and expect.

Let us suppose now that this radical policy of dealing with the railroads should be adopted—that they should be denied opportunity to earn a reasonable return on capital invested, that a large part of the investment in them should be confiscated and that they should be driven into government ownership. Does any man in his senses doubt that the same policy soon would be applied to the public utilities of the country which represent an investment of approximately \$17,000,000,000? Under the public policy of this country they are subject to exactly the same kind of regulation as the railways. But business men engaged in what is called "private" businesses may say they at least would not be affected—that their concerns are not subject to the same kind of regulation as railroads and public utilities.

That comforting reflection is without any foundation in fact or reason. This attack upon the railways is not merely an attempt to secure reasonable rates in accordance with recognized constitutional principles; it is a socialistic attempt to break down these recognized constitutional principles in order that an unconstitutional raid may be made upon capital invested in railroads. Those who favor this policy of railway regulation recognize the fact that the Supreme Court of the United States may attempt to render decisions that would defeat it. Therefore, they are also advocating legislation of a constitutional amendment which would require a two-thirds vote of the members of the Supreme Court to set aside a law as unconstitutional. That would mean, in effect, that a minority of the members of the Court could uphold as constitutional a law passed by Congress which a majority of its members believed to be unconstitutional. Now, the principle on which it is held that railways and public utilities may be regulated in a certain way, and that manufacturing

companies, mining companies and farmers may not be regulated in that way, is merely a legal principle which the people, if they ever become determined to do so, can set aside by appropriate legislation or constitutional amendment. The plain fact is that the people of the United States can, whenever they desire change any law or constitutional principle that they do not like.

We are thus unavoidably led to two conclusions. The first is that in the long run the railway question will be settled as public sentiment wants it settled. The second is that the precedent set in dealing with the capital invested in railroads will in all probability be followed in dealing with capital invested in other enterprises and lines of business. The railways at the present time are the objects of a widespread and determined attack the purpose of which is, first, to confiscate a large part of the capital invested in them and, secondly, to throw them into government ownership by making successful private management impossible. But they are only the front line trench. Once that trench is taken no other capital invested in property will be safe.

### How Will the People Meet It?

How will the people meet the issue presented? This is a democratic country. How will democracy meet the test that is being applied to it by the railroad question in the form in which it is now being presented?

The easy thing for us all to do would be to relieve ourselves of platitudes to the purport that the good sense of the American people will stand the test and that a solution will be found which will be just to all concerned. Having said things that are so easy and so comforting to say we might go about our business, forget about the railroad question and devote ourselves to the two great American games of criticizing the politicians and seeing how much money we can make in the shortest possible time.

As for myself, I do not believe that would settle the matter. In a more or less busy life I have found time to read a good deal of history; and I have found that all the great mistakes in public affairs have not been made by popes and kings. I have found that many of the great mistakes that have brought ruin upon entire nations have been made by the people themselves. It was the people of the ancient Greek democracies, it was the people of the Roman Republic, who brought ruin upon them. It was the people of Germany, largely guided, it is true, by bad leaders, who recently have brought ruin upon Germany. It was the people of Italy who, permeated by socialist and communist sentiment, recently brought that country to the verge of a ruin like that of Russia from which it was saved by the Fascisti uprising. It is the people of Great Britain who have put a socialist labor government in power. And the history of the United States shows that our own people repeatedly have only narrowly avoided making very serious mistakes in dealing with great economic questions—for example, mistakes in dealing with the currency which soon would have made the American dollar what the Russian ruble and the German mark are today.

Democracy, after all, is only government by all the people, and we should rid our minds of cant and recognize the fact that what all the people will do regarding any important question will depend upon the extent to which correct information is disseminated among them and upon their ability to assimilate it; upon the extent to which they are shown the true tendency and purpose of policies that are advocated, and upon what kind of leadership they are given. The men of ability in a democracy ought to be the leaders of the people. They ought to be their leaders in politics as well as in business. They do not need to run for office to be leaders in politics. They can lead by giving part of their time and energy to the study and discussion of great public problems and the dissemination of correct information.

What are men of real ability in this country doing in regard

to great public problems at the present time? Many of them are doing nothing at all, but are devoting almost their entire time and energy to the senseless pursuit and expenditure of money they do not need.

Meantime there is being carried on persistently, ably and almost universally throughout this country a propaganda for socialistic legislation, and for socialism and communism themselves, which is undermining our political and industrial institutions. The advocacy of a socialistic and destructive policy of railway regulation is only one form which this propaganda is taking, but it is one form. The radical leaders are clever men. They know the time and place to sow the seed which they expect in due season to bring forth an abundant harvest. Wherever and whenever any particular class of men are suffering from adverse conditions and are discontented there and then the radicals pitch their tents and become active in advocating some policy skilfully adapted to promoting the radical cause. The farmers are the largest single class of property owners in this country. But the farmers in large territories are suffering and discontented; and therefore, among them we find agitators busy advocating a policy of railway regulation which they know will appeal to the farmers but the adoption of which they also know tends not only to destroy property in railroads, but also in the long run property in farm land, as well. But while the radicals recognize the fact that present conditions afford them an opportunity, a large majority of business men and property owners are so busily engaged in trying to make more money that they do not recognize the fact that in the last analysis the railroad question is quite as much their problem as it is that of railway managers and owners of railway securities.

The railroad question of today is a test of our democracy. But a democracy is not composed entirely of wage earners and tenant farmers. It is composed also of farm owners and professional men and business men; and this question is not merely a test of wage earners and tenant farmers, but is equally a test of farm owners, of professional men and of business men. My reading of history has taught me not only that the people of many countries have made ruinous mistakes, but that in almost every such instance the mistakes might and probably would have been avoided if men of ability and property had performed their plain and simple duty of leaving their social pleasures and their money getting long enough to inform themselves regarding great public problems and to guide public opinion into right channels and toward wise ends.

I say to you, in conclusion, therefore, that if this railroad question is not settled right, if it is settled in such a way as to promote the cause of socialism in this country, the outcome will not be due merely to the masses of the people and the politicians they elect and who mislead them; but it will be equally due, and even more due, to those successful failures among the more intelligent and able men in this country, who shall fail to perform their duty of helping to educate and direct public opinion and to influence by proper means the deliberations and decisions of government bodies.

#### Where the Road Divides

Democracy in almost every civilized country in the world may truly be said to be at or almost at the parting of the ways. It is approaching the point where the road divides, one fork leading toward socialism, the other fork leading toward an improved system of production and distribution of wealth under private ownership of property and private initiative and enterprise in the management of business. The question of the direction in which democracy will decide to travel is not presented in this country so directly and in such an immediately pressing way as it is in some other countries where population has become excessively dense in proportion to national resources and means of production, and where in consequence, while, on the one hand, there is not as great

wealth as here, there is, on the other hand, an amount of unemployment, of poverty and of dire distress which greatly exceeds what we have ever known in this country or may know for years to come. But the socialistic sentiment which prevails so widely in many other countries, and which is largely due to conditions there which do not exist here, has been widely disseminated in the United States by immigrants who have brought it with them here. We have recently had numerous illustrations of how radical men can combine the votes of radical working men in cities and towns with the votes of discontented farmers in such a way as to enable them to get elected to the highest public offices where they can so preach subversive doctrines as to attract nation wide attention. The radical senators who recently have come in such a large number from the west were elected even more by the votes of working men in cities and towns, who in spite of their high wages are imbued with socialistic sentiments, than they were by the votes of farmers.

If the present political and industrial institutions of the United States are to be preserved this radical movement must be defeated. There is but one way to defeat it, and that is for all those who wish to defeat it to present a united front to it and to oppose strongly, actively and to their utmost every policy which tends in the direction of socialism, whether it is proposed to apply it to railroads, to coal mines, to banks, to farms or to any other kind of property or business. If it is to be defeated it must be opposed by the dissemination of information, by the use of arguments, by votes at elections, by the formation and adequate support of organizations which will be as active, and more effective, as the numerous organizations which the radicals have constantly at work distributing literature in every part of this country.

The most important and immediately pressing concern of those who desire to arrest the radical movement should be the defeat of the attempts now being made to secure the adoption of legislation which would involve wholesale confiscation of railroad property and make continuance of private ownership and management of railways impossible. It is not at all inconceivable that the outcome of the present struggle over the railroads, whatever it may be, will in future be recalled as the thing which for many years determined whether the public policy of this country should be directed toward maintaining our present industrial and political system, or toward the more or less gradual undermining of our present industrial and political system in order to establish some kind of socialistic system in its place.

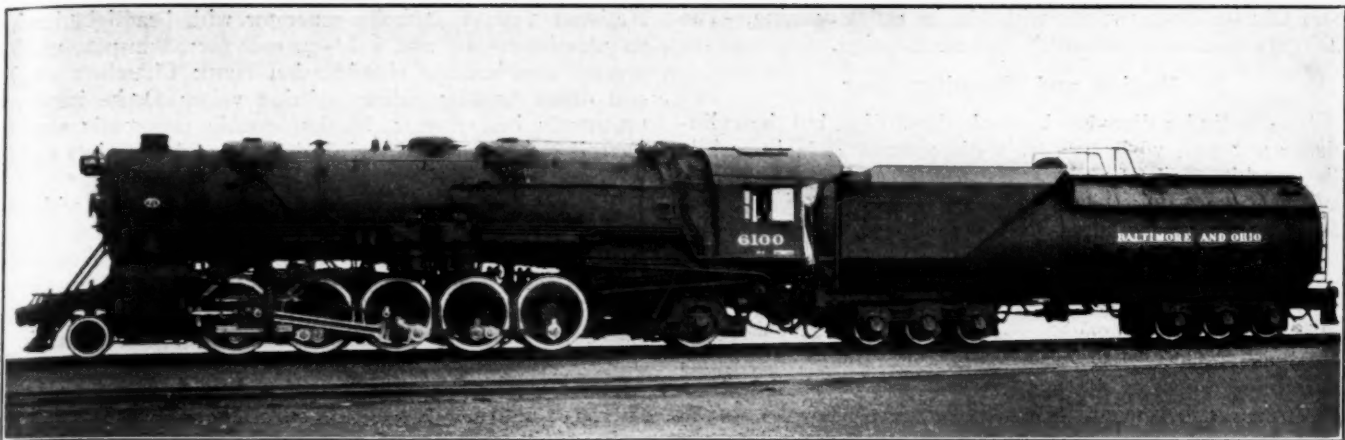


P & A

Large Electric Sign Over New B. of L. E. Bank in New York—Pennsylvania Station in Background

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The Baltimore & Ohio Ordered 75 Class S-1 Type 2-10-2 Locomotives in 1923

## Heavy Santa Fe Locomotives for B. & O.

Tractive Force of 84,260 Lb. Obtained with 64-in. Drivers—  
Tenders of Unusual Capacity Facilitate Long Runs

ONE OF THE OUTSTANDING locomotive orders of 1923 was that of the Baltimore & Ohio for 75 locomotives of the 2-10-2 type. This order was notable not only on account of the number of engines and the type, but also for their exceptionally heavy weight, large hauling capacity and tenders of an unusual size designed to facilitate long runs by cutting out stops for fuel or water. The order was divided between the Baldwin Locomotive Works and the Lima Locomotive Works, the former receiving 50 and the latter 25. These locomotives weigh 436,510 lb. in working order, have 30-in. by 32-in. cylinders, 64-in. drivers and a rated tractive force of 84,260 lb. In weight and tractive force, they represent practically the maximum yet obtained in a non-articulated locomotive. Such locomotives with an axle load of practically 70,000 lb. can, of course, be operated only on roads where the track and bridges are of the heaviest description.

A comparison between these locomotives and those of the same type recently ordered by the other roads is given in the table below.

Road	Weight, lb.	R. T. F.	Cylinders, in.	Drivers, in.
B. & O. ....	436,510	84,260	30 x32	64
U. P. ....	379,000	70,450	29½x30	63
I. C. ....	382,000	73,800	30 x32	63
S. P. ....	398,000	75,150	29½x32	63½
G. N. ....	423,340	87,000	31 x32	63

Except on the mountain divisions where Mallet locomotives are employed, the standard heavy road engine of the Baltimore & Ohio is a Mikado. The latest of this type, B. & O. Class Q-4b, of which 85 were ordered from the Baldwin Locomotive Works in 1922, weighed 327,430 lb., had 26-in. by 32-in. cylinders, 64-in. driving wheels and a rated tractive force of 63,200 lb.

The 2-10-2 type locomotive is, however, not new on the B. & O. The last of this type to be placed in service were a lot of 30 built by the Baldwin Locomotive Works in 1914 and designated as Class S. They weighed 410,000 lb., had 30-in. by 31-in. cylinders, 58-in. driving wheels and carried a boiler pressure of 200 lb. These proportions gave a rated tractive force of 84,400 lb. They have been used in both road and pushing service and have proved especially satisfactory in the latter class of work, the majority now being employed on the Connellsville division as helpers on the Sand Patch hill where the grade is 1.98 per cent.

The new 2-10-2 type locomotives, designated as Class S-1, have 33½ per cent greater tractive force than the Mikado type and are designed to combine the hauling capacity of the old Class S with the higher speed capacity of the Class Q-4b, and with this end in view, they also have driving wheels 64 in. in diameter. These are probably the largest driving wheels ever used on a 10-wheel coupled locomotive, and they fit the new design not only for heavy grade service, but also for work on divisions having moderate grades where it is desired to haul an increased tonnage as compared with the Mikado type locomotives, while maintaining practically the same speed.

The Class S-1 locomotives are designed to traverse curves of 16 deg. and have a maximum height of 15 ft. 5¾ in., a maximum width of 10 ft. 11 in., and an overall length, engine and tender, of 100 ft. 8¼ in.

The weight in working order of the engine only is 436,570 lb., of which 347,230 lb. is on the drivers, 31,750 lb. on the front truck and 57,710 lb. on the trailing truck. The weight of engine and tender complete in working order is 730,000 lb.

### The Boiler and Accessories

The boiler has a straight top with a slope on the bottom at the rear end to give ample water space under the combustion chamber. The steam pressure carried is 220 lb. The evaporative heating surface consists of 5,270 sq. ft., of which 389 sq. ft. are in the firebox, arch tubes and combustion chamber and 4,881 sq. ft. in the tubes and flues. The superheater is the Type A and contains 1,512 sq. ft. of surface in the 54 double loop units. The firebox is 132½ in. long and 96 in. wide and has a combustion chamber 39 in. long. The brick arch is supported on five water tubes. The firebox has a complete installation of Tate flexible staybolts.

The grate area, 88 sq. ft., is the same as in the Class S locomotives and the grate castings are interchangeable in the two designs.

The locomotives are equipped with Duplex stokers and the feedwater supply to the boiler is by Hancock H. N. L. injectors of 6,000 gal. per hour capacity. Other boiler fittings include Franklin automatic firedoor No. 8, three Coale 4-in. safety valves, two 2-in. Okadee blow-off cocks, Ashton iron case steam gages, Wiltbonco reflex water glasses,



# The Proposed Operating Expense Classification

## Elements Deserving Merit in Tentative Revision— Suggestions for Maintaining Comparability

By Assistant Comptroller

IN A PREVIOUS ARTICLE in the *Railway Age* (February 2, 1924, page 325) an analysis was made by the writer of the changes in the classification of operating expenses proposed by the Bureau of Accounts of the Interstate Commerce Commission. It was pointed out that the continuity of expenses on a comparable basis would be seriously disturbed and that the analyst would be confronted with serious difficulties if the proposed changes were adopted. As the Bureau of Accounts invites constructive criticism, it is the purpose of this article to suggest some modifications in the tentative revision that will enable the analyst to continue his comparisons of the more important items of expense without extensive restatement of expenses as now classified.

In considering what modifications should be made in the tentative revision, we will take up first those changes which affect comparisons between the general accounts of the revised and present classifications; and second, the changes affecting comparisons between the primary accounts.

### Changes Affecting Comparisons of General Accounts

The most radical change in the revision is the classification of general accounts along departmental lines and the elimination of the long established distinction between maintenance and other operating expenses. This change is reflected in the titles of the new general accounts as indicated by the following table in which the new accounts are compared with the corresponding general accounts of the present classification.

Tentative Revision	Present Classification
Roadway and Structures Department.	Maintenance of Way and Structures.
Equipment Department.	Maintenance of Equipment.
Transportation Department.	Transportation—Rail Line.
	Transportation—Water Line.
Traffic Department.	Traffic.
Other Departments and Expenses.	General.
	Miscellaneous Operations.
Compensation for Damages.	No corresponding general account.
	Group of primary accounts taken from various general accounts relating to injuries to persons and damage to property and shipments.
Transportation for Investment—Cr.	Transportation for Investment—Cr.

The most serious change under this departmental grouping from the point of view of the analyst is the transfer from Transportation expenses of the items now included in engine-house expenses, yard and train, and the larger part of the items included in train supplies and expenses to new accounts under Equipment Department, entitled respectively "Preparing motive power" and "Preparing cars." The amounts involved in this transfer are so large that comparisons of these two general accounts will be seriously affected and the restatement of the accounts of the present classification will be difficult because the basis for splitting the account, "Train supplies and expenses" between the two general accounts is not available from the published reports of the carriers.

### "Preparing Motive Power" and "Preparing Cars"

This change in the classification of the items to be included in the general account, "Maintenance of Equipment," to be called in future "Equipment Department" is particularly far reaching in its effect upon analyses of railroad operations. The cost of maintaining equipment as compared with the cost of operating it is one of the significant points to determine in such analyses, and the importance of keeping a clear distinction in the accounts between maintenance and opera-

tion cannot be emphasized too strongly. As the cost of preparing locomotives and cars for service can be studied as effectively when these expenses are classified under "Transportation" as when they are classified under "Equipment," there does not appear to be any advantage from the transfer to offset the distortion of the general accounts. It is therefore suggested that this change be eliminated from the revision.

Other changes due to departmental grouping which affect comparisons of general accounts are the raising of three new primary accounts under the general account, "Other Departments and Expenses" as follows:

Telegraph and telephone.  
Purchasing and stores.  
Police.

The first of these represents a transfer from Transportation Expenses of the present primary account "telegraph and telephone operation." These expenses are more closely related to Transportation than to any other general account and should properly be left there unless a strictly departmental grouping is to be followed.

### "Purchasing and Stores"

The new account, "Purchasing and stores" includes total store expense now distributed to various primary accounts. There is much to be said in favor of this new account as it would tend to subject these expenses to more careful scrutiny by executives than when they are submerged in the various primary accounts affected. On the other hand, the elimination of these charges from primary accounts will seriously distort comparisons. Furthermore restatement of the accounts under the present classification to exclude store expense cannot be made from the published reports of the carriers.

It is suggested that the situation be met by continuing the distribution of store expense to primary accounts and attaching to the operating expense statement a schedule giving the total store expense and the distribution to primary accounts. In this way both the primary and general accounts would be kept on a comparable basis and the total store expense would be readily available for analysis. It is not probable that any substantial saving in accounting expense would result from the elimination of the distribution of store expense to primary accounts. The small expense involved in continuing this distribution seems justified in order to keep the general and primary accounts on a comparable basis and thus avoid the expense of restating accounts for the purpose of analysis.

### Account "Strike Expenses" Suggested

There is much to be said in favor of the new account, "Police" and its location under Other Departments and Expenses, particularly the inclusion therein of the cost of additional guards and police protection during strikes. This strike expense is now chargeable to "Other expenses" under the appropriate general account. For example, a large portion of the extraordinary expenses in connection with the shop strike of 1922 was charged to "Other expenses" under Maintenance of Equipment, this account in 1922 for all Class I roads amounting to \$53,591,348 as compared with only \$625,096 in 1921. Maintenance of Equipment expenses in 1922 were inflated by these charges which had no

relation to the actual cost of maintaining the equipment or to expenses normally incident thereto. If these expenses had been included under General Expenses, the fluctuations due to the strike would have been equally noticeable and would therefore have been given proper weight in an analysis, and at the same time the actual expenditures for maintaining the equipment would have been kept on a comparable basis with the expenses of other years.

On the other hand, there does not seem to be any advantage in transferring the cost of the normal force of railroad watchmen and special agents to this new account. These normal police expenses are now included chiefly in account 371, Superintendence, under Transportation expenses, with which they are closely related. This transfer will distort comparisons and restatement of the general accounts cannot be made from published reports.

It is therefore suggested that the title of the new account be changed from "Police" to "Strike expenses" and that only the additional police protection required in connection with strikes be charged to this account. The expense of the normal force of special agents, watchmen, etc., now included in Transportation account 371 should be charged to a new account under Transportation expenses entitled "Railroad police." To the new account, "Strike expenses" should also be charged all other temporary expenses due to the strike, such as the cost of housing and feeding employees, bonus payments to employees, payments to employment agencies, etc., so that this account will reflect substantially all of the direct expenses of strikes.

This accounting would seem to be preferable to the proposed division of strike expenses between the new account, "Police" and the accounts "Superintendence" and "Other expenses" under various general accounts according to the class of employees striking.

Other changes in general accounts affecting comparisons which are not due primarily to the principle of departmental grouping of accounts are as follows:

#### Transfer of Charges from Profit

##### and Loss to Operating Expenses

The revision provides that charges in connection with service loss on property retired and not replaced now included in Profit and Loss account 619 will be made to operating expenses. It is not stated whether these charges will be distributed to the primary repair accounts in the case of fixed property, but presumably this is the intention. If so, it is suggested that these charges relating to fixed property be included in a new primary account under Roadway and Structures Department. The charges relating to equipment should also be segregated in one account under "Equipment Department." In this way, the restatement of the two general accounts to put them on a comparable basis with the general accounts of the present classification would not be a difficult matter.

#### New General Account Called

##### "Compensation for Damages"

It will be noted from the table of general accounts that a new general account entitled "Compensation for Damages" has been raised which includes primary accounts from various general accounts of the present classification. The bulk of the charges in this new general account come from Transportation expenses, the principal items being loss and damage freight, injuries to persons and damage to property. This account also includes the items now contained in the accounts, "Injuries to persons" under Maintenance of Equipment and Maintenance of Way and Structures.

The reasons for preserving the distinction between maintenance and operation have been stated elsewhere and it would seem that the cost of injuries to persons engaged in maintenance work is properly chargeable to that work. If the

identity of maintenance accounts is to be preserved, as we most earnestly recommend, these two accounts should not be transferred. As stated above, the balance of this new account is drawn chiefly from Transportation accounts. There does not appear to be any objection to combining these primary accounts into a general account, as such a grouping would be helpful in subsequent analyses, and the restatement of transportation expenses of previous years under the present classification would not be difficult.

There are a number of other changes proposed by the Bureau of Accounts which will affect to some extent the comparability of the general accounts of the present and proposed classifications. These changes all appear justified, either on account of saving in accounting expense or for purposes of analysis, and it is not believed that comparisons will be seriously disturbed thereby.

The adoption of the modification suggested will put the general accounts of the new classification on a basis that will be readily comparable with the general accounts of the present classification after a few adjustments which can be easily made from the published reports of the carriers. The grouping of comparable general accounts and the adjustments referred to are given in the following table:

<i>Revised Classification</i>	<i>Present Classification</i>
Roadway and Structures Department. Adjustments—Deduct new account suggested above containing charges for service loss in connection with fixed property retired and not replaced.	Maintenance of Way and Structures.
Equipment Department. Adjustments—Deduct new account suggested above containing charges for service loss prior to 1907 in connection with equipment retired.	No adjustments. Maintenance of Equipment.
The sum of these two general accounts of both classifications as adjusted will represent total maintenance expenses, and will be on a fairly comparable basis.	
Transportation Department. Compensation for Damages.	Transportation—Rail Line. Transportation—Water Line.
The sum of the two general accounts under each classification represents total transportation expenses as now classified, and will be on a comparable basis. The primary accounts of the present classification corresponding to the accounts contained in the new general account, "Compensation for Damages" (as modified), can be easily obtained from the statements of operating expense primary accounts and are as follows:	
Account 420 Injuries to persons. Account 418 Loss and damage—Freight. Account 419 Loss and damage—Baggage. Account 416 Damage to property. Account 417 Damage to live stock on right of way	
Traffic Department.	Traffic.
No adjustments required.	
Other Departments and Expenses.	General. Miscellaneous operations.
The new general account in this group is comparable to the sum of the two general accounts of the present classification without any adjustments.	
Transportation for Investment—Cr.	Transportation for Investment—Cr. No adjustments required.

Having straightened out the new general accounts so that the restatement of expenses will not be burdensome, let us see what can be done for the primary accounts.

#### Changes Affecting Comparison of Primary Accounts

Several of the modifications in the revision suggested above for the purpose of putting the general accounts on a comparable basis will also make unnecessary the restating of primary accounts. There are, however, certain other changes affecting primary accounts alone which will require some modification.

##### Consolidation of Primary Accounts

The most striking of these changes is the reduction in the number of primary accounts by consolidation from 134 to 77 (excluding depreciation, retirement and joint facility accounts which are not covered by the tentative revision.) The reduction in the number of primary accounts under each general account is given in the following table:

## Tentative Revision

## Present Classification

General account	Number of primary accounts	Number of corresponding primary accounts
Roadway and Structures Department.....	21	43
Equipment Department.....	14	18
Transportation Department.....	18	39
Traffic Department.....	5	9
Other Departments and Expenses.....	14	17
Compensation for Damages.....	4	7
Transportation for Investment—Cr.....	1	1
Total.....	77	134

This drastic reduction in the number of accounts is made chiefly in the interests of saving in accounting expense and in most respects will not interfere with analysis. In the cases now described, however, it is believed that some changes should be made in the consolidated account or the expense of restating accounts for the purpose of analysis will outweigh the economies in original accounting expense resulting from the reduction in the number of accounts.

## Roadway Maintenance

The new account, Roadway Maintenance, includes the items contained in the following accounts of the present classification:

Account 202	Roadway maintenance.
Account 220	Track laying and surfacing.
Account 272	Removing snow, ice and sand.
Account 204	Underground power tubes.
Account 225	Crossings and signs (in part).

This consolidation not only makes a very large account to analyze, amounting to over one-third of the total roadway and structures accounts, but it contains all track labor now distributed to separate accounts to reflect the cost of applying track material; removing snow, ice and sand; and other roadway maintenance. It is important to maintain this separation of track labor, particularly in view of the violent fluctuations from year to year on many railroads in the cost of removing snow and ice. Furthermore the tentative revision recognizes the importance of comparing the material applied with the labor cost of application and has provided for the separation of each primary account between labor, material and miscellaneous charges. It seems therefore inconsistent to eliminate the present distribution of track labor so that the cost of the labor used in applying track material cannot be compared with the cost of the material applied in the track.

It is suggested that the new consolidated account, "Roadway maintenance," be eliminated and that the present distribution of track labor to the three accounts named above be continued.

## Yard Service

The new account, "Yard service," includes the items classified in the following accounts of the present classification:

Account 377	Yard masters and yard clerks.
Account 378	Yard conductors and brakemen.
Account 379	Yard switch and signal tenders.
Account 380	Yard enginemen.
Account 381	Yard motormen.
Account 385	Water for yard locomotives.
Account 386	Lubricants for yard locomotives.
Account 387	Other supplies for yard locomotives.

This new consolidated account contains so many dissimilar items that it would be difficult to analyze without restatement. The following grouping is therefore suggested to meet this objection.

## Suggested New Accounts

## Present Accounts

Yard supervision.	377 Yard Masters and yard clerks.
	389 Yard supplies and expenses.
Yard engine service.	378 Yard conductors and brakemen.
(Except fuel and power.)	380 Yard enginemen.
	381 Yard motormen.
	385 Water for yard locomotives.
	386 Lubricants for yard locomotives.
	387 Other supplies for yard locomotives.

Account 379, "Yard switch and signal tenders," should be consolidated with the account "Signal and Interlocker Operation."

## Work Train Service

The Revision provides that work train expenses now distributed to the primary roadway and structures accounts shall be segregated in a new account entitled "Work train service." As in the case of store expense, there are many advantages in having these expenses drawn together in one account and thereby subject to the scrutiny of executives. On the other hand, comparison of primary accounts with work train expense excluded will be affected to some extent. It is suggested therefore, that this expense be handled along the lines suggested for store expense, namely that the distribution be made to primary accounts as at present, and that the total work train expense with the distribution to each primary account be shown on a schedule attached to the operating expense statement. While it is probable that there would be some saving in original accounting expense by eliminating the distribution to primary accounts as pointed out by the Bureau of Accounts, it is believed that this saving would be largely offset by the cost of restating expenses under the present classification to exclude work train expense.

## Shop Expense

It is proposed to handle shop expense in the same manner as store expense and work train expense, namely eliminate the distribution to primary accounts and raise a new account under Equipment Department to include the total shop expense. Shop expense represents such a large part of the equipment repair accounts that the proposed elimination would seriously distort comparisons with previous years under the present classification. As these comparisons are rightly considered of great importance in analyses of these expenses, it is essential that these primary accounts be kept on a comparable basis.

The same treatment is therefore suggested for this expense as was set forth above for store expense and work train expense.

The other changes in the primary accounts are chiefly due to simplified accounting procedure and seem fully justified on this account, particularly as comparisons will not be seriously disturbed thereby.

## Conclusion

The writer wishes to express his appreciation of the many constructive features contained in the suggestions of the Bureau of Accounts. The separation of items contained in each primary account between labor, material and miscellaneous charges is a long step along the road of practical analysis of railroad expenses. The reduction in the number of accounts will simplify accounting and make the statement of operating expenses a more workable instrument for the analyst. In view of these and other advantages, it seems particularly desirable to remove the objectionable features of the tentative revision and it is believed that this end will be accomplished if the modifications herein suggested are adopted by the Bureau of Accounts when the revision is finally submitted to the commission for approval.

THE RAILWAYS' INTEREST IN TAXES is the subject of the Illinois Central's latest advertisement in newspapers along its lines. Taxes are reflected in the rates paid for transportation and the burden is borne by persons who often do not realize the fact. Indirect taxes are paid by more persons than direct taxes and among those who pay indirect taxes are the patrons of the railroad. Taxes paid by the railroads are a part of the cost of supplying transportation service and must be borne by the public in freight and passenger rates. The direct taxes paid by railways in 1923 amounted to \$330,000,000, which was 5.2 per cent of the gross earnings; and the railroads paid indirect taxes in the cost of materials and supplies.

## Conditions for Clinchfield Lease Suggested

WASHINGTON, D. C.

A SERIES OF CONDITIONS which it is suggested might be attached to an authorization by the Interstate Commerce Commission of a lease of the Carolina, Clinchfield & Ohio and its subsidiaries to the Atlantic Coast Line and the Louisville & Nashville, has been submitted to all persons who have intervened or filed appearances in the proceeding before the commission on the joint application of the two roads for such authority by Chairman Hall of the commission. In a letter dated February 9 and made public on February 11, Chairman Hall requests that, in order to expedite final disposition of this proceeding, views be presented within 15 days from the date of the letter, "regarding the arrangement to be sanctioned and required in case the decision of the commission is favorable to acquisition" of control of the Clinchfield "upon terms and conditions that will safeguard all interests." Specific consideration should be given, he says, to the authorization of control by the applicants by lease for a term of 999 years from May 11, 1923, subject to the following conditions:

(1) The applicants shall maintain the Carolina, Clinchfield & Ohio Railway as a separate corporate entity and shall establish and maintain a separate organization for the combined properties of that company and its subsidiaries so that the three companies shall constitute a separate operating unit with a responsible management directly in charge of the operations of such properties.

(2) The Louisville & Nashville Railroad Company shall, within six months after the date hereof, file with the commission its application under paragraph (18) of section 1 of the interstate commerce act for a certificate of public convenience and necessity to construct the proposed connections between its McRoberts line and its Harlan County branch on the one hand, and the Clinchfield on the other, and, in the event it proposes to acquire existing lines for use as part of such connections, under such other provisions of the act as are pertinent; and shall, if in such proceeding it is found that the present or future public convenience and necessity require or will require the construction of either or both such connections, proceed with such construction in accordance with the terms of the certificate issued in such proceeding.

(3) Existing routes and channels of trade and commerce heretofore established by other carriers in connection with the Clinchfield shall be preserved, existing gateways for the interchange of traffic with such other carriers shall be maintained, and the present neutrality of handling traffic inbound and outbound by the Carolina, Clinchfield & Ohio Railway and its subsidiary, the Carolina, Clinchfield & Ohio Railway of South Carolina, shall be continued so as to permit equal opportunity for service to and from all connecting lines reached by the line of the Clinchfield Companies without discrimination as to routing or movement of traffic which is competitive with traffic of the applicants, or either of them, and without discrimination against such competitive traffic in arrangement of schedules.

(4) The applicant shall permit the line of the Clinchfield and its subsidiaries to be used as a link for through traffic, via existing gateways of interchange, or via such gateways as may hereafter be established under authority of the commission by means of the connecting lines which the Louisville & Nashville Railroad Company proposes to build, equally available to such other carriers, now connecting, or which may hereafter connect, with the line of the Clinchfield and its subsidiaries, as may desire to participate in through routes and joint rates between points in territory north and west of the line of the Clinchfield and points at and beyond the Ohio River on the one hand and points in the southeastern territory on the other, under divisions to be agreed upon by the applicants, or either of them, and/or the Clinchfield organization, on the one hand, and by the other participating carrier or carriers on the other, which shall not discriminate as to rates against such participating carrier or carriers as compared with the applicants, or either of them; the intention of this provision being that the line of the Clinchfield and its subsidiaries shall be maintained as an open route equally available to all carriers connecting with the Clinchfield for traffic between the points designated.

(5) The Clinchfield shall accept, handle, and deliver all cars inbound and outbound, loaded and empty, without discrimination in promptness or frequency of service between cars destined to or received from competing carriers, and irrespective of destination or route of movement.

(6) Whenever additional cars are required for outbound load-

ing, because of inadequacy of available car supply on the Clinchfield lines at any given time, for any cause, orders for such additional cars shall be accepted from the shipper by the local Clinchfield organization and by it promptly transmitted to the designated connecting line without discrimination, and all cars ordered by and delivered to the Clinchfield shall be promptly moved to the shippers by the Clinchfield without discrimination on account of the proposed route.

(7) It shall be expressly provided by the lease, as executed, that no securities shall be issued by the lessors, or any of them, except with our approval where such approval is required under the provisions of section 20a of the interstate commerce act; and that the par value of stock and/or the principal amount of bonds or other securities issued to refund maturing obligations or to reimburse the lessees for expenditures made as provided in the lease, shall not on the one hand exceed the principal amount of the securities refunded, and on the other, the amount of actual expenditure for additions, betterments, extensions, or improvements properly chargeable under our accounting classification to capital.

(8) The proposed lease when executed shall contain a provision that the same shall become null and void and of no effect whenever the commission shall find that the control, acquisition of which is approved and authorized by this order, interferes with the consummation of the complete plan of consolidation adopted and published under the provisions of section 5 of the interstate commerce act.

(9) The control herein authorized by lease shall be held subject to termination by order of the commission if and when found by the commission to interfere with the consummation of its complete plan of consolidation under the provisions of section 5 of the interstate commerce act, and for this purpose the commission will reserve full jurisdiction over the case to make such order or orders as, after hearing, it may deem to be necessary and appropriate.

(10) This proceeding may be reopened at any time by order of the commission either upon the initiative of the commission or, in the discretion of the commission, upon the motion of any person claiming an interest in the matter, for the purpose of making such orders as the commission may deem necessary or appropriate supplementary to the present order.

"It should be clearly understood," Mr. Hall says, "that the commission has taken no definite position regarding the proposed conditions. Interested parties may file briefs up to March 1, 1924. Is oral argument before the commission desired?"



P. & A.

President Willard of the Baltimore & Ohio and Mrs. Willard as They Sailed for Europe Recently

# Santa Fe Is Building Large Terminal in Dallas

Site of Abandoned Passenger Station Being Utilized for Extensive Warehousing Development

**T**HE GULF, COLORADO & SANTA FE has recently started the construction of a large terminal building at Dallas, Tex., which is believed to represent the largest urban development ever undertaken by any railroad in the Southwest east of the Rocky mountains. It represents the suc-

cessful culmination of efforts to effect an intensive utilization of valuable real estate owned by the road in that city which became available for other uses following the completion of

the city. It had originally been used for a passenger station but with the completion of the new Union terminal its use for this purpose was abandoned.

The plans which are being followed in the construction call for four units. The first comprises a 19-story office building



The Terminal Is Located in the Heart of the City

cessful culmination of efforts to effect an intensive utilization of valuable real estate owned by the road in that city which became available for other uses following the completion of



Architect's Drawing of the Commerce Street Front of the Office Building, Showing the Warehouses in the Rear

the new Union station at Dallas in 1915. This land, which was acquired in 1882, comprises an area approximately 900 ft. long by 160 ft. wide, running through a portion of the wholesale district and into the edge of the retail district of

fronting on Commerce street with a 10-story warehouse building at the rear, the entire unit having a width of 135 ft. and extending 200 ft. from Commerce street to Jackson street. The second will be a 10-story warehouse 165 ft. by 200 ft., extending from Jackson street to Wood street; the third, a 10-story warehouse 100 ft. by 245 ft. extending from Wood street to Marilla street, and the fourth, an 8-story warehouse 140 ft. by 170 ft. extending from Marilla street to Young street. The whole group is linked together by a system of house tracks in a continuous basement under all of the units and the streets between them, the city traffic being carried at the original grades on concrete slab bridges. The track system has been laid out to give maximum service with minimum interference from switching movements and is greatly facilitated by the separation of the track and the street grades. This has also made it possible to reach a wholesale section of the city where track service is essential, and where street traffic is considerably congested. Such service to the new structure will be supplemented by tunnels leading to industries adjoining. The office building will conform to modern standards of construction and appurtenances and will contain 200,000 sq. ft. of office space. The warehouse units will contain 1,200,000 sq. ft. of floor space. Each of the buildings is being supplied with numerous well located, commodious elevators connecting the track level in the basement with warehouse space in the upper floors of the buildings. Plans of the basement contemplate provision for storage space, partitioned in such a way as to provide exclusive use thereof by separate tenants, subject to lock and key and service by elevators. The trucking platforms adjacent to the tracks are for common use by all tenants.

Considerable of the available space in this group of buildings is already under lease, the advantage of having warehouse service of this character in direct connection with office space in the heart of the retail district of the city assuring success for the project and proving of material advantage to Dallas, as a distributing center of the Southwest.

A hard limestone formation lying under the entire group of structures, and providing excellent foundation for walls and columns, was encountered in such shallow depth in three

of the units as to require some additional cost for basement excavation, all of which was, however, fully anticipated from soundings made prior to the preparation of the plans. In the excavation for the structures and the streets considerable difficulty arose in providing continuous service for the sewer, water and gas lines and the telephone, telegraph and electric power pole lines and conduits which were encountered. This was accomplished by the reconstruction of some of the lines on diverted locations and by suspension on cable spans or brackets in the case of others.

The underground track system connects with yard tracks of the Gulf, Colorado & Santa Fe, the mouth of this depressed track approach being located about 1,000 ft. south of Unit No. 4, at an elevation two feet above maximum high water mark of the Trinity river at this point. The approach is on a grade of two per cent, with reinforced concrete retaining walls at standard clearance. It is planned to perform the switching service in and out of the basement with a smokeless steam locomotive, the steam plant located in the basement of Unit No. 1 having been designed to perform the charging of this locomotive in addition to fulfilling the other power and heating requirements of all the buildings.

Intricate engineering problems were encountered in the design of structures to carry the streets over the underground tracks, especially in the case of Marilla street on account of the angle at which this street crosses the building site and the fact that provision had to be made for carrying a railroad track on an eight-degree curve at the grade of the street.

This group of buildings, when completed, is to be known as the "Santa Fe building." The project is being constructed and will be operated by the Terminal Building Corporation of Dallas, the directors of which are a number of leading citizens of Dallas, associated with officers of the railway company. F. G. Pettibone, vice-president and general manager of the G., C. & S. F., is vice-president of the terminal.

The general construction, which commenced September 1, 1923, is under contract to the Watson Company of Dallas, and is progressing rapidly. The building schedule contemplates the completion of the entire group by May 1, 1925; but it is planned to complete the office building by January 1, 1925. The total estimated cost of the entire group, including the value of the real estate, is \$5,000,000. An idea of the size of the project can be gained from the fact that 60,000 cu. yd. of concrete, 3,200 tons steel reinforcement, 1,800,000 face brick and 4,200,000 common brick will be required for construction.

Lloyd R. Whitson and F. Cowdroy Dale are the architects. All contracts and specifications conform to the forms of the American Railway Engineering Association. R. T. Summers and George C. Maney are assistant engineers in charge of the construction. We are indebted to J. L. Starkie, office engineer, Gulf, Colorado & Santa Fe, Galveston, Tex., for information from which the article above was prepared.

## Railroad Matters in Congress

WASHINGTON, D. C.

THE SENATE committee on interstate commerce at its regular weekly meeting on Wednesday decided to allow seven days for the hearing on Senator Gooding's bill to amend the fourth section of the interstate commerce act, which is to begin on February 18. The bill would make the prohibition against charging lower rates for a long haul than for a short haul absolute instead of dependent upon the discretion of the Interstate Commerce Commission. Three days are to be allowed to the proponents of the bill, three to the railroads and one for rebuttal and Commissioner Campbell of the Interstate Commerce Commission is to be the first witness.

Upon receipt of a letter from the Interstate Commerce Commission stating that the Gooding resolution providing for an investigation of railroad publicity activities, which has been favorably reported by the committee, would in its present form involve an excessive amount of work and expense upon the part of the commission to collect the information called for, it was decided that Senator Gooding should ask to have the resolution returned to the committee to be redrafted so that the commission may gather the information by questionnaire and perhaps only for Class I roads.

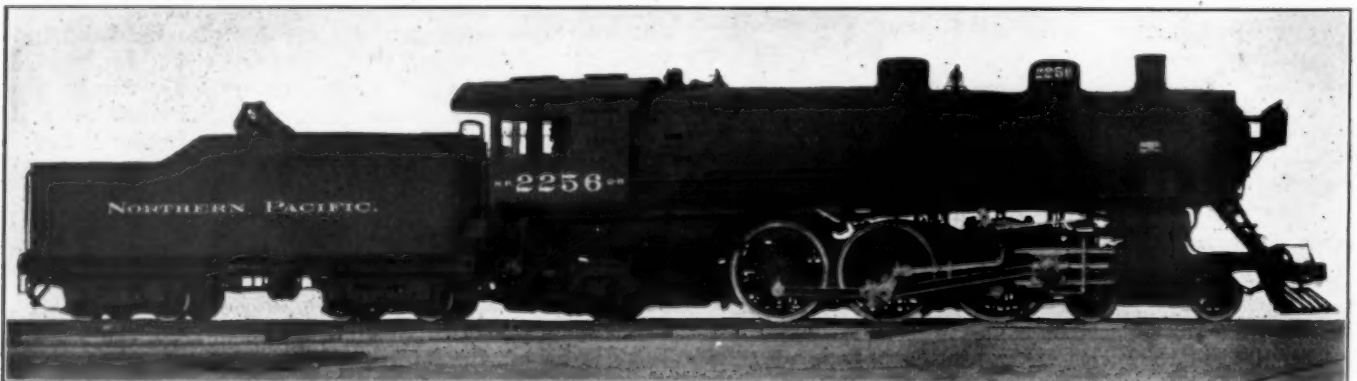
The committee referred to a sub-committee headed by Senator Howell all bills before it relating to the statute of limitations on claims against railroads.

Senator Cummins asked that the committee give early consideration to his railroad consolidation bill, S. 2224, and after some discussion it was decided not to refer it to a sub-committee but to have it considered by the full committee. There was some objection to its being considered ahead of other bills that were introduced before it.

Senator Lodge of Massachusetts has introduced in the Senate a bill, S. 2460 "to facilitate commerce by prescribing overtime rates to be paid by transportation lines for inspection of arriving passengers and crews."

Representative Rainey has introduced a bill, H. R. 6865, requiring railroad companies to reimburse employees for property losses sustained by moving terminals or division points.

The bill introduced in the Senate by Senator Smith and in the House by Representative Cooper of Ohio to amend the locomotive inspection laws and increase the salaries of the chief, assistant chief and district inspectors of the Interstate Commerce Commission, represents the desires of the railroad train service brotherhoods. H. E. Wills of the Brotherhood of Locomotive Engineers and A. S. Lovell of the Brotherhood of Locomotive Firemen and Enginemen are understood to have had an active part in drafting the bills and in urging their enactment.



Pacific of 41,900 lb. Tractive Force, Not Including Booster, Built by the American Locomotive Company for the N. P.

# Ventilation and Heating of Passenger Cars\*

## Suggestions for Economical and Effective Ventilation With Improved Heating for Added Comfort

By K. F. Nystrom

Engineer of Design, Chicago, Milwaukee & St. Paul

THE VENTILATION AND HEATING of railway passenger cars are subjects so closely allied that in order to understand one, it is necessary to have a fundamental knowledge of the other. Writers on these issues generally consider the problem of heating first and ventilation as a subject of secondary importance. It seems, however, that a correct understanding of the requirements for good ventilation should form a foundation for the study of the problem of heating passenger train cars.

### Passenger Car Ventilation

The proper and healthful relative humidity of air has only in recent years been given the thought and attention it rightfully deserves, despite its influence upon personal comfort and health. Water vapor is issued from the human body in two ways: in exhaled air when breathing and through perspiration. From  $1\frac{1}{2}$  to 2 lb. of water are evaporated daily from the skin of a person at rest. This evaporation as well as any other evaporation takes place due to application of heat. The source of heat in this instance is the human body itself and the rate of evaporation is affected by the motion, temperature and humidity of the surrounding air. Evaporation takes place by direct application of heat and is essentially a refrigeration or cooling process. Heat being abstracted from the body for this purpose naturally tends to lower the surface temperature and we actually feel several degrees cooler than the temperature recorded by the thermometer in the room. As heated or warmed air is expanded by heat, the percentage of moisture or relative humidity is lowered with the result that the capacity of the air for absorbing moisture is greatly increased. Under these conditions, we experience the sensation of dry heat. This causes an excessive and unnatural evaporation of moisture to take place from the skin and membranes of the respiratory organs.

The human body is a very sensitive power plant and it is obvious, therefore, that such an important function as perspiration can only act properly inside extremely narrow limits.

A person can remain comfortable even though there exists a considerable variation in temperature provided the relative humidity is such as to keep the dispersion of total heat from the skin constant. For this reason a thermometer can not alone be depended upon to measure comfortable air conditions for the occupants in a room because it does not include any measure of the moisture in the air. In order to measure the relative humidity and thereby ascertain a comfortable temperature, hygrometers, or wet bulb thermometers, should be employed to a much greater extent than at present. It may be that the future heat controls used in connection with heating cars will be regulated by means of hygrometers or, quite possibly, by a combination of thermometer and hygrometer. A heat control of this kind would undoubtedly result in a great saving of fuel.

### Influence of Occupants on Temperature and Humidity

Respiration and the presence of the occupants in a room not only increase the carbon dioxide content in the air, but

may add materially to the heat and moisture content of the air.

All life processes are accompanied by the generation of heat from within. The blood serves to carry oxygen from the lungs to remote tissues, where combustion takes place, and carbon dioxide is carried back and eliminated by the lungs in respiration. As a result, an average normal temperature of 98.6 deg. F. is maintained. Normally, a uniform, but not too rapid, dispersion of heat must be maintained if the individual is to remain comfortable. The rate of dispersion by radiation, evaporation, etc., must equal the rate of heat generation. Hence it appears that the only function of external warming is to reduce the rapidity with which the body parts with or gives off its heat.

An average adult must throw off about 400 B.t.u. per hour for comfort, of which about 30 per cent is lost by contact with the air, 43 per cent by radiation and 27 per cent by exhalation and other means. A part of the 30 per cent, which is absorbed by the air coming in contact with the body, is carried off in water vapor. At a room temperature of 70 deg. F. and a relative humidity of 70 per cent, it will take at least four cubic feet of air per minute to carry off this water which is evaporated from the skin.

The radiation is noticeable to the sense of touch. Air, if dry, is a nearly perfect non-conductor but allows radiation to take place through it readily, hence, in a room with very dry air at 75 deg. F., a person may feel cold if the walls are at 50 deg. F. due to radiation loss from the body to the cold wall surfaces. This condition has an important bearing upon passengers in a railway car. Many cars of all steel construction are not properly insulated with the result that inside walls are cold and, notwithstanding that the inside temperature seems to be satisfactory, the passengers are uncomfortably cold or warm. Window sills and arm rests in all steel passenger cars are generally made of wood so as to avoid passengers coming in direct contact with the steel. This prevents a conduction of heat from the human body, but it does not eliminate the radiation. Designers of passenger cars should take into consideration what effect radiation has upon the comfort of passengers, when calling for new equipment. The ideal inside wall surfaces should, therefore, be either non-conducting, or serve as reflectors of heat rays, or should preferably combine both qualities. This will explain the use of a mirror finish employed on the interior of a vacuum bottle.

The gases and water vapor thrown off from a person under average room temperature conditions (70 deg. F. temperature and 70 per cent relative humidity) is of a higher temperature than the surrounding air and, therefore, lighter. Thus it will be seen that vitiated air will not fall to the floor as has often been presumed, but will naturally rise above the level of the breathing line and immediately diffuse itself into the surrounding air.

### Effect of Carbon Dioxide

#### Content on Required Air Supply

An adult at rest requires 20 cu. in. of air at each respiration and will make from 16 to 24 respirations per minute so that a total of from 320 to 480 cu. in. of air, or about 15 cu. ft. per hour, is required. This amount may be increased

\*Brief abstract of a paper presented at a meeting of the Canadian Railway Club, Montreal, February 12, 1924.

by exercise. Since this exhaled air contains about 400 parts of carbon dioxide ( $\text{CO}_2$ ) per 10,000, an adult at rest gives off  $\text{CO}_2$  at the rate of 0.6 cu. ft. per hour. Hence, in order to maintain the  $\text{CO}_2$  content at a fixed amount, say 10 parts in 10,000, it will require for each adult a supply of 1,000 cu. ft. of outside air containing 4 parts of  $\text{CO}_2$  per 10,000.

The old theory that the sensation of discomfort arising in enclosed space was due to either an excess of carbon dioxide or an insufficient amount of oxygen, has been discredited. On the testimony of numerous experimenters, it has come to be generally agreed that an atmosphere containing less than three per cent of pure carbon dioxide and as high as 15 per cent oxygen, has no toxic effect and produces no distressing symptoms. It is very rare for the  $\text{CO}_2$  produced by respiration to contaminate the air of any room, even with the poorest ventilation, to the extent of more than 50 parts in 10,000, which is one half of one per cent. This amount of carbon dioxide alone has no harmful influence, according to the best available evidence.

(After a discussion of the relation of carbon dioxide content to modern car ventilation, the application of ventilators and the mechanical requirements for ideal ventilation, the author presented a summary and certain recommendations.)

#### Economical and Efficient Ventilation

1. Carbon dioxide,  $\text{CO}_2$ , need not exceed 10 parts in 10,000 parts of air. This is equivalent to 1,000 cu. ft. of air per passenger per hour.
2. Humidity in the car should be controlled inside reasonable limits.
3. Heat should be controlled automatically with respect to the humidity in the air. Under no condition should the car be allowed to become overheated.
4. Air motion should be slight enough so that it is not annoying as a draft, yet strong enough to change the envelope of air around the body continuously, so as to maintain uniform evaporation at a constant temperature.
5. Dust should be kept out of the car as far as practical. Cars must be systematically cleaned daily. Where cars lay over at terminals, they should be thoroughly scrubbed and dusted both inside and outside.
6. Bacteria in a car will be kept down to a minimum if the car is kept clean and free from dust.
7. Odors can be controlled by the railroad only so far as this affects the sanitary condition of the car. Here, however, the conductor and the trainmen can be of considerable assistance by tactfully assigning passengers having a low standard of cleanliness to certain cars.
8. Diffusion of the air in the car will best be accomplished, under present systems of exhaust ventilation, by providing a plurality of very small inlets.
9. Ventilators in the car should be opened only in proportion to the number of passengers, so as to save fuel. If a proper ventilating system is installed, only half of the ventilators need be operated if the car is half full.
10. Rules should be issued to trainmen instructing them how properly to operate the ventilating systems in order to obtain the maximum comfort for the passenger at a minimum cost to the railroad.
11. Water seals in hoppers and in drain pipes from washstands and water cooler should be of sufficient depth to assure a perfect seal at all times. This is an important item in keeping the car in a sanitary condition.
12. In toilet rooms and probably in drawing rooms and compartments, efficient ventilation can be obtained by installing a chimney extending from floor to deck. At the floor, the chimney should be provided with a shutter and at the deck connected to an exhaust ventilator. With this system, odors are removed near the floor, thus minimizing their tendency to rise to the breathing zone. Incidentally, the heat loss is at a minimum as the air is removed from the coldest part of the room.

#### Recommendations

The first two recommendations submitted will improve the present system without any cash outlay. The other recommendations are to some extent contingent upon the amount the railroad is able to set aside for improvement to rolling stock.

1. Keep deck screens and ventilators clean—regular periodical cleaning.
2. Educate trainmen how to use deck sash or ventilators for the comfort of the occupants of the car and that overheating means discomfort to passengers and loss of money to the railroad company.
3. Install exhaust fans in smoking rooms and kitchens of dining cars.
4. Close up permanently all deck sash and install natural exhaust ventilators in body of car and in toilet rooms. It would be desirable to supplement the ventilators in the body of the car with at least two exhaust fans.
5. Install automatic heat control to prevent discomfort of occupants from overheated cars and loss of money by the railroad.

#### Passenger Car Heating

Generally speaking, there are only two modern heating systems in use in passenger trains at the present time on the American continent—the hot water system and the vapor system.

The hot water system, which is a self-contained unit in each car, is almost exclusively used as an emergency or auxiliary item. This system has not proved satisfactory in the past. It is costly to install, requires constant attention, is dirty and easily put out of order in cold weather because the water freezes in the drums or in the pipes. It is also difficult to control and to maintain desirable temperatures. Moreover, it adds from 2,800 lb. to 3,500 lb. to the weight of the car. The hot water system is a necessity for some equipment, as, for instance, private cars which may be stored at small stations where steam is not available. With present day regularity in train service, however, even under extreme climatical conditions, it is probable that the hot water system could be eliminated from a number of cars now so equipped, particularly where trains do not exceed ten cars in length.

The vapor system seems to give general satisfaction. Its basic principle is embodied in the reduction of the live steam furnished from the engine through the train line to atmospheric pressure at 212 deg. F. by passing through a vapor regulator located underneath the car. With this system, there are no heating pipes within the car containing steam at a pressure higher than that of the atmosphere and as these pipes are open to the atmosphere at the outlet end at all times, thus preventing the accumulation of pressure, the danger of scalding passengers from broken pipes is, therefore, eliminated. Steam at atmospheric pressure always registers 212 deg. F. Therefore, with the vapor system, the heating pipes in all the cars are of the same temperature, regardless of the pressure in the train line which naturally varies from the front to the rear of the train. This avoids the overheating of the cars in the head end of the train to secure a satisfactory temperature in the cars at the rear.

(The author's discussion of heat losses, value of insulating materials, effect of radiating surfaces and heat requirements has been omitted in this abstract.)

#### Summary and Suggestions Regarding Car Heating

1. Heat losses through windows constitute 23.3 per cent of the total. We pay dearly for windows in passenger cars when cleaning, breaking of glass and loss of heat are taken into consideration. In sleeping cars and parlor cars, where each passenger has ample room and light, would it not further economy and safety to reduce the number of windows? In case of accident, the glass is a real menace.

2. The area of letter board and lower and upper deck is not insulated in proportion to the balance of the car. The heat losses at these areas are 42.6 per cent of the total. Insulation can readily be improved at these points and considerable saving in fuel and increased comfort to passengers would result.

3. There is decided economy in using storm sash as the heat losses at windows are thereby reduced one-third.

4. It is a common practice to use 2-in. insulation in floors and walls and 2½-in. in ceiling of refrigerator cars and it does not seem out of place, when the heat losses are seriously considered, to adopt this practice in passenger cars. The heat losses would thereby be reduced about one-half and the car would be cooler in summer and less noisy.

5. Insulation should be applied continuously the full length of the car in place of a number of small pieces fitted in between steel members. This could be accomplished by applying the insulation to the inside face of the steel members in the same manner as in steel frame refrigerator cars.

6. When passenger cars are in the coach yard for cleaning or storage, it is not necessary to maintain a high temperature and the steam supply should be reduced. This can best and most economically be accomplished by automatic heat control.

7. Heating pipes inside of the car should be installed with proper drainage and kept two inches from the floor so that the floor could be cleaned with a scrubbing brush or mop underneath the pipes.

8. Steam pipes resting on the car floor are subject to rapid corrosion and often have to be replaced, a considerable job as in most cases the seats have to be removed. Consideration should be given to the advisability of using iron or even brass piping for car heating, or having this piping protected by galvanizing or some other durable and non-corrosive coating. The disadvantage of galvanizing lies in the fact that it does not protect the threaded couplings, which are the most vulnerable part of this pipe system. A malleable lead plating would be preferable and less expensive than wrought or brass piping.

Reviewing this subject, it will be seen that we have not as yet reached the acme of perfection in ventilation and heating of passenger cars—there is still room for improvement. In connection with ventilation, the problem of ventilation is to get sufficient air in the car when it is standing still and to restrict the air movement at high speed. The humidity should be considered as one of the factors forming satisfactory ventilation. The present installations of ventilators can be made to function rather satisfactorily if properly understood and taken care of by all concerned.

In the analysis of heating, it has been shown that at the present time the average passenger car is not uniformly insulated when heat losses are considered. A close study of the problem will reveal that in regard to comfort of passengers, as far as temperature is concerned, it is immaterial whether the car is made of wood or of all steel, provided the proper amount of insulation is used.

## The Financial Aspect of Tie Preservation

### An Analysis of the Economy of Protecting Timber Against Decay and the Returns from Treatment

By H. S. Sackett

Consulting Timber Engineer, Chicago

WOOD PRESERVATION in the United States was given its original impetus by the railroads. They have been primarily responsible for its development from the early experimental stages to the present degree of economic efficiency and financial success. The railroads themselves rightfully have become the largest beneficiaries from the practical application of this vital means of timber conservation. The net profit on their investment in treated ties during the past decade aggregates and probably exceeds \$250,000,000; in other words, the employment of treated ties, although comprising a minor proportion of the total requirements, has, nevertheless, reduced the annual cost by approximately 18 per cent.

This economy has been achieved by prolonging the life of all cross-ties in tracks from the former average of 6 years to the present average of 9 years. But this can be further extended to at least 15 years by the preservative treatment of practically all ties required. Thus far the maximum percentage of the total annual tie renewals that has been treated is 50 per cent.

Few who understand the actual profit derived from the use of treated ties would question the desirability of the maximum application of this economy if the means of financing the additional expenditure were equally as clear. It would require, in round figures, approximately \$20,000,000 additional yearly to treat all of the cross-ties annually placed in tracks. In comparison with the annual cost of tie renewals, which is about 4 per cent of the total operating expenses of Class 1 roads which operate 90 per cent of the mileage in the United States, this expenditure is not too

great, especially when its earning power is considered, which we shall presently find to be greater than would be assured if a similar sum were to be invested in a manner calculated to return a profit equivalent to the average from the railroad industry as a whole.

A comprehensive understanding of the huge economy in expanding the use of treated ties to as nearly 100 per cent as practicable can best be had when considering the subject as applied to the railroad industry as a whole; for one is impressed by the fact that the present replacement value of ties already in track equals approximately 7.5 per cent of the total capitalization of the railways in the United States, exceeding the very substantial sum of one and one-half billion dollars. In volume of material consumed, the ties now in track represent about two-thirds of the entire annual production of lumber in the United States.

The increase in life of three years, on the average, already obtained equals a saving in the consumption of timber for this purpose of approximately 30 per cent over the next five years. Employment of 100 per cent of treated ties, with the consequent minimum increase in life to 15 years would provide, after the 15 year period, a potential reduction in the consumption of timber aggregating 22.5 per cent of the present annual cut of 60 billions of board feet.

In addition to having proved a financial success, treated ties offer the most practical solution of the problem of assuring the requisite quantity of ties essential to the maintenance of railroads a score of years in the future; in fact, the only effective means of checking the constant rise in the cost of cross-tie materials is the maximum employment of practical

methods of conservation now, thereby gradually reducing the demand for replacement and approaching an equalization of supply and demand. That this will result rapidly in proportion to the increase in the use of treated ties has been demonstrated by the reductions already made possible on a number of the larger systems in their annual per mile requirements for renewals.

For the five year period from 1906 to 1910, inclusive, an average of 17 per cent of the annual tire requirements were treated; for the following ten year period from 1911 to 1920, inclusive, the proportion of treated ties rose to approximately 40 per cent of the renewals, which figure has since varied but little. The extent of the saving made became apparent during the second period wherein the average renewals per year were reduced 30 ties per mile, or a total saving for the 14 roads upon whose reports this comparison is based (representing 32 per cent of the total Class 1 mileage operated) of some 2,200,000 ties per year. Applying this basis to all Class 1 roads would show an annual saving of 6,700,000,000 ties, or about \$13,000,000 a year.

Further examination reveals that in 1921, after over 10 years' benefit from the gradually increased use of treated ties, the average yearly renewals per mile of track were reduced from 263 to 198, a net saving of 65 ties per mile of track. As the average life of ties at present in place is somewhat over 9 years, approximately 300 ties would be required per mile to keep tracks in *first class* condition. This has already been reduced to 198 ties per mile on about one-third of the mileage of Class 1 roads where 60 per cent of the ties used are treated. Thus, it is evident that the former prediction of very considerable savings accruing from extending preservative treatment to practically 100 per cent of the ties used is far from exaggeration. The ultimate saving would readily equal 150 ties per mile of track per year, or, after 10 years of such practice, aggregate over 35,000,000 annually, cutting average renewals 40 per cent and representing at present values around \$70,000,000 per year.

The matter of cross-tie conservation is by no means picayune. The expenditure for ties ranks *fifth* in importance in relation to the total operating expenses of the railroads (exclusive of the items covering labor and wages) and *first* in ratio to the potential profit to be derived from the required investment.

Among some who follow the tendencies to let the morrow take care of itself the fond hope seems to have taken root that further depletion of the ties supplied would be offset by the development of satisfactory substitutes. For such it would be well to pause and carefully consider the records established by cross-ties of materials other than wood as well as their first cost and their ultimate cost. A recent report of the Committee on Ties of the American Railway Engineering Association concludes with the very definite statement that "no substitute tie has yet been developed which can be recommended for general use in high speed insulated track." Other than wood ties used by the railroads in the United States during 1921 were reported 13 per cent higher in first cost than treated wood ties and with an average life of less than 10 years are more costly by 46 per cent per year of service rendered. Even partial substitution of the wood tie appears to be economically unsound and to be sedulously avoided rather than encouraged.

Irrespective of the direct economic advantages to be derived from the increased use of treated ties by the nation as a whole and the railroads in particular, during the next decade or two, the question of immediate expansion is largely one of finances. It is therefore proposed to examine the probable returns on an additional investment of \$20,000,000 per year, which has been suggested as the sum required to at once permit the use of treated ties exclusively.

The net earnings of the railroads in the United States for 1923, based on the estimated valuation established in 1920, is reported as 5.1 per cent. A similar return on this sum

might therefore be considered as normal. In order to establish the soundness of the theory that special financing of the investments in preservative treatments, not alone for ties, but all other timber and lumber used in railroad construction

#### THE PERCENTAGE OF TREATED TIES USED BY DISTRICTS

Total	
Total mileage of Class 1 roads.....	234,702
Number of ties in track (approximate) .....	735,123,704
Annual renewals (five year period).....	81,892,718
Average life (approximate) .....	8 years
Southern District	
(South of the Ohio and Potomac Rivers and east of the Mississippi River)	
Mileage operated .....	43,826.28
(18.7% of Class 1)	
Ties in track .....	123,000,000
Annual renewals, 19,985,000 equals.....	16.3%
Annual renewals T. (20.5%) .....	4,082,504
Annual renewals N. (79.5%) .....	15,817,186
Average life of ties.....	6.14 years
Treating plant capacity.....	33,219,720 ties
Eastern District	
(North of the Ohio and Potomac Rivers and east of Lake Michigan, a line between Chicago and St. Louis and the Mississippi)	
Mileage operated .....	58,884.59
(25.1% of Class 1)	
Ties in track .....	164,879,000
Annual renewals, 26,885,000 equals.....	16.31%
Annual renewals T. (42.5%) .....	11,225,000
Annual renewals N. (57.5%) .....	15,184,860
Average life of ties.....	6.13 years
Present available treating plant capacity.....	34,002,960 ties
Western District	
(West of Lake Michigan, a line between Chicago and St. Louis and the Mississippi River)	
Mileage operated .....	131,991.19
(56.2% of Class 1)	
Ties in track .....	370,000,000
Annual renewals, 39,651,000 equal.....	10.73%
Annual renewals T. (53.2%) .....	20,764,484
Annual renewals N. (46.8%) .....	18,236,620
Average life of ties.....	9.32 years
Treating plant capacity.....	51,567,110 ties

and equipment where a majority of replacements are necessitated by failure due to decay, it will be assumed that the sum mentioned would cost 7 per cent, compounded annually. At that rate the \$20,000,000 would grow to \$55,180,000 during the 15 years which is the average minimum life of treated ties. But the earning power of this sum so invested would provide a surplus, over carrying charges, aggregating in excess of \$20,000,000, based upon present factors of life and cost and not considering the further direct profit resulting from checking the persistent increase in the basic cost of ties which is inevitable, unless present supplies are conserved by doubling and trebling their useful life through preservative treatment.

There remains no question of the profitability of treated ties; rather the question is why the increase in the use of treated ties should not be extended immediately to the maximum limit practicable, when it would be difficult to earn with safety a greater net return on the required investment? Any justifiable doubts are disposed of by such service records as are recorded in the history of wood preservation. Burnettized ties (zinc treated) have averaged 20 years service in numerous instances and under a wide variety of conditions and circumstances; they have thus established a net profit of twice their original cost at an additional investment in treatment of less than 20 per cent. Further contrasts, even more numerous, can readily be cited where under identical conditions creosoted ties are still in service after 14 years, with every indication of rendering a minimum average of 20 to 25 years service, where untreated ties of similar species were removed after 6 to 7 years service. With such evidence plentifully available it is not difficult to conclude that procuring the necessary capital to allow the application of wood preservation to railroad construction in the maximum degree practicable is *not* alone a sound policy but likewise the highest economic efficiency. There exists no justifiable reason that a maximum of only 50 per cent of the annual tie renewals have been preserved by chemical treatment; especially, not in the face of the fact that with the exception of an insignificant percentage every untreated tie placed in track represent a direct loss of 90c in potential earnings and an aggregate waste of about 48 board feet of timber.

# Improvement of Air Apparatus in Train Control

## Indiana Equipment Corporation Develops Valves to Give Graduated Reduction of Brake Pipe Pressure

SEVERAL DEVELOPMENTS have recently been completed in the automatic brake operation of the train control system of the Indiana Equipment Corporation, Indianapolis, Ind. Road tests of this system of train control were made on the Cleveland, Cincinnati, Chicago & St. Louis in the early part of July, 1923, as was reported in the July 21, 1923, issue of the *Railway Age*. Since that time the apparatus has been developed on a practical manufacturing basis in a form more readily installed and maintained on a locomotive. A description of the functions of the different pieces of pneumatic apparatus are given herewith for the first time.

Briefly, this train control system consists of an automa-

relief or exhaust to atmosphere of any air leaking into the application chamber of the distributing valve. Feed pipe pressure enters at port *C* and passes out of port *D* to the engineman's brake valve. The pipe *I* connecting the brake pipe and the automatic brake valve is blanked off by the slide valve. Brake pipe port *I* is lapped and port *H*, the exhaust leading to the check valve is also lapped.

### Operation at High Speed

With the apparatus in the charged condition and running at high speed, a brake application is accomplished by the release of electro-pneumatic valves *C*<sub>1</sub> and *C*<sub>2</sub> when encountering a de-energized ramp at a caution or a stop signal.

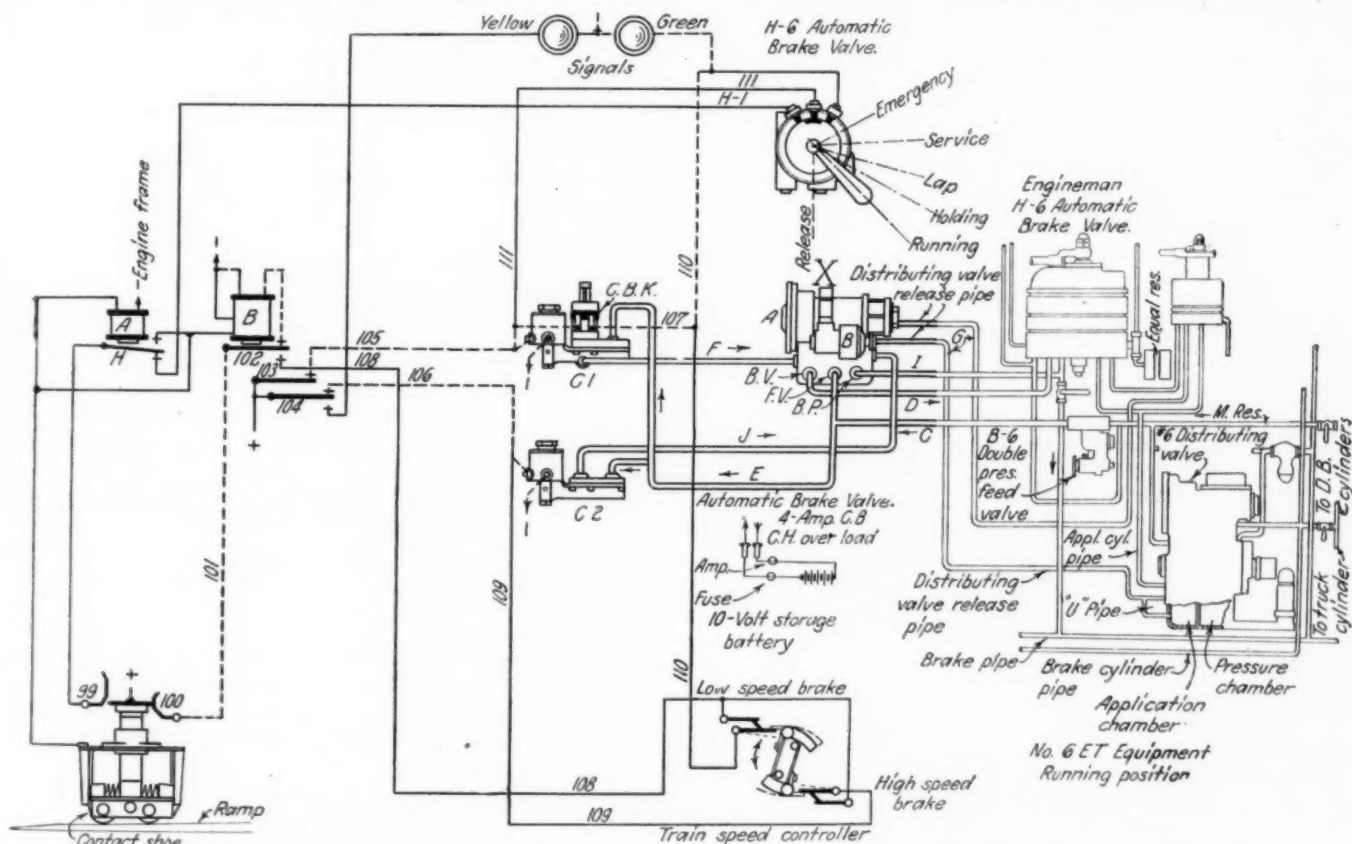


Fig. 1—Diagram of Circuits and Piping Showing Connections of Automatic Valves

ically operated brake valve with control features, that performs the same functions as the engineman's brake valve. This automatic brake valve is operated pneumatically, being controlled indirectly by a speed controller and a wayside ramp which is interconnected with the automatic block signal system.

### Operation of Automatic Valve

In Fig. 1, the apparatus is in the charged or running position. The heart of this system, in contrast with other train control systems, is the automatic brake valve *X*. The piping shows the feed valve pressure in pipe *C* from the B-6 feed valve. Referring to Fig. 2 and Fig. 3, it is seen that feed valve pressure is maintained in cylinders *Y* and *Z*, through piping *E*, *F*, and *J*, the pipes *GG* acting as air

The valve *C*<sub>1</sub> releases and exhausts air pressure from cylinder *Y*, and feed valve pressure in the valve body forces the piston 4 to the left, carrying the slide valve with it. At the same time, magnet valve *C*<sub>2</sub> releases piston 5 (shown in Fig. 3) which moves 3/16 in., releasing the check valve. This gives a large area for brake pipe air pressure from ports *I* and *D*, connecting with port *H*, to exhaust to the atmosphere, controlled by the limiting device. The feed valve maintaining air pressure is interrupted.

The braking system is exhausted from two ports (with the engineman's valve in the running position), through feed pipe connection *D* and through brake pipe connection *I*. Either of these ports will release brake pipe pressure to permit a brake pipe reduction of 25 lb. in from 5 to 25 sec. according to the adjustment provided. However, in actual passenger train tests at different speeds with the high speed

quick action brake and with the high speed controller adjusted to go into action at a train speed of over 50 miles an hour, a brake pipe reduction of 20 lb. was made in 8 sec., using both ports in the valve, and again in using the port from the brake pipe only, by placing the engineman's brake valve in the lap position.

The selecting of high speed quick action and low speed braking is controlled by magnet valve  $C_2$ . This valve will not release at the lower speeds. A slow rate of reduction is accomplished by the check valve held in the closed relation by piston 5, when the rate of reduction will be governed by the size of the choke plug arrangement in the body of the check valve. When magnet valve  $C_1$  releases at low speed it results in a gradual brake pipe reduction and lengthens the time of the reduction. In the action of the limiting device, the air exhaust to the atmosphere is broken up in intermittent pop action and slows up at the end of the reduction, effecting a gradual stoppage of the brake pipe exhaust. If the engineman is alert and quickly moves the brake valve handle to the holding position, he can prevent quick action or forestall brake action when running under the low limit speed. This valve may be changed for freight or passenger service without any adjustments other than turning a hand-wheel. If desirable, this hand-wheel can be left in the release position and used as a maximum speed brake for helper engines to prevent them from being operated at too great a speed when running light.

The pressure reduction limiting valve is a modified valve as used on the distributing valve on the locomotive. An air

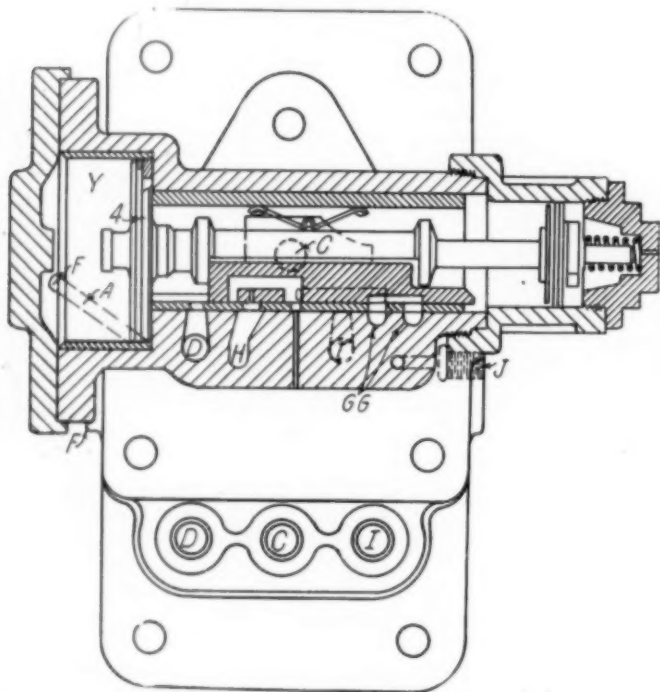


Fig. 2—Cross-Section Showing Operation of Slide Valve

chamber has been added around the body as well as two adjustment nuts which permit positive adjustment and slow up the pop action, thus giving the exhaust a slow start and stop.

#### Description of Operation

The automatic brake valve is under the control of the magnet valve  $C_1$  for maintaining the running and charging positions and for brake application position. The release of magnet valve  $C_2$  alone will not cause a brake action.

Fig. 1 shows the braking and electrical devices in the clear set up for high speed running. The system is put into service before leaving the engine house or terminal by closing

the circuit switch with the battery. Relay  $B$  will not pick up and the control will be set up for low speed running. Magnet valve  $C_2$  will be energized but magnet valve  $C_1$  remains de-energized until the engineman's automatic brake valve has been moved to the release position and back to the running position. This will set up the automatic brake valve into the running position and the brake system will be charged and the locomotive can proceed under the low speed limit of the speed controller. This set up remains for low speed until the first clear roadside ramp is contacted; if the block is clear the ramp will set up the traveling control system on the locomotive into the high speed proceed position as shown in Fig. 1.

Relay  $A$ , having received current transmitted from the

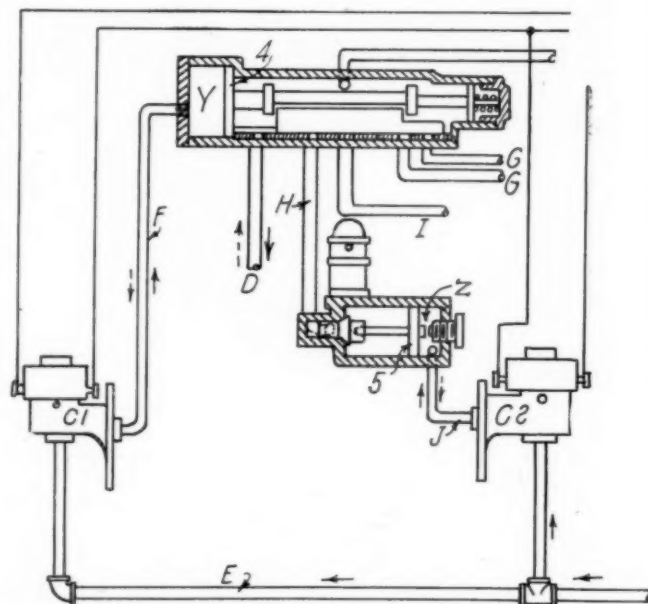


Fig. 3—Diagrammatic Connections of Control Valves, Automatic Valve and Check Valve

local ramp, picks up and relay  $B$  is picked up, thus maintaining this section of the relay in closed relation until the shoe leaves the ramp, when the circuit of relay  $A$  is opened at circuit breaker 99 on the shoe and relay  $B$  continues to be maintained in closed circuit relation by circuit breaker 100 on the shoe controller. This closes the circuit, as shown in dots, and removes the brake control from the speed controller.

#### Proceeding Over Ramp with Signal

##### Indication Caution or Stop

Assuming that the first ramp indicates caution or stop, as a train approaches with a low speed set up, the shoe contacts over a de-energized ramp; the engineman must then move his brake valve to either the holding or lap position. This move is sufficient to close the circuit to hold electric valve  $C_1$  energized, and prevent a brake action. The circuit is energized by positive battery from shoe breaker 99 through back point switch  $H$  of relay  $A$  during travel over a de-energized ramp. This is the only circuit that can supply electric current during travel over a de-energized ramp as the brake-maintaining circuit is opened at circuit breaker 100 by the upward movement of the shoe. This checking by the engineman is necessary over all de-energized ramps.

If a train should proceed over the home ramp of an absolute stop signal, indicating stop, a brake application will immediately follow and it will then be necessary for the engineman to break a seal and replace fuses. The advance ramp for a stop and stay signal must be located at full

braking distance from the home ramp and signal. If a train should be required to pass over a ramp with an absolute stop signal indicating stop, with a caution card or other slow order, it will be necessary for a trainman to hold a circuit controller (a part of the ramp) in open relation during the shoe contact over the ramp and the engineman must hold his valve in the lap or holding position.

### Low Speed Proceed Following High

#### Speed Entrance Into Caution Block

When a train is running at a high speed, say 60 miles an hour, both of the speed controller switches will be open and the automatic brake valve functions when encountering a caution ramp and the high speed brakes are applied until the speed is reduced to the predetermined low speed limit. Both speed control operating arms are closed at this point, completing the circuit 108 to 100 to the release switch on the engineman's automatic brake valve, also through the green signal light, thus indicating to the engineman that he can release the brakes if desirable. He can then make the release in the usual manner by one or more moves with his brake valve to the release position. The first move to release position will close the circuit 110 through the switch on the engineman's valve to 111 and magnet valve  $C_1$  to common, the circuit breaker  $K$  on the valve movement will then close the maintaining stick circuit, 110-107. Only a momentary contact is required at the engineman's valve circuit controller to energize  $C_1$  to complete the low speed circuit. This circuit will always be opened at CB-100 on the shoe when contacting with a ramp and when a ramp is de-energized or on open circuit the engineman must place his brake valve on the holding or lap position to maintain the magnet valve  $C_1$  in the closed circuit relation. This is accomplished by positive battery from the shoe controller 99 through the back point of circuit switch  $H$  and circuit  $H_1$  through engineman's valve switch circuit 111 and magnet  $C_1$  to common. Referring to the circuit breaker 99 and 100 on the shoe, the CB-100 will close before CB-99 breaks the circuit on the downward movement. If an engineman should fail to move the brake valve to the holding position the magnet valves  $C_1$  and  $C_2$  will be on open circuit and release, causing a full service brake application.

### Train Exceeding Speed in Permissive Block

When a train exceeds the speed in a permissive block the  $C_1$  valve will release and a low speed brake action will result,  $C_2$  being maintained by a circuit through the operable switch on the high speed controller. The engineman can make an immediate release and the brake action will not pull the speed of the train down to any great extent for the initial brake action is slowed up to provide for a smooth braking of the train. However, there is a different brake action for the low speed braking when the train is running above the low speed brake set up, say 40 miles an hour and approaching a de-energized ramp. When the shoe contacts a dead ramp at caution or a stop and proceed block, both  $C_1$  and  $C_2$  controllers release while passing over the ramp, then  $C_2$  picks up and holds, which assists in the initial braking.

**SURPRISE CHECKING** on the Pennsylvania Railroad in the month of December, showed 99.9 per cent efficiency on the part of employees who were tested. A percentage as high as this or higher is reported practically every month. The number of tests made in December was 62,000 and in November 66,000. Each superintendent is required to make at least a minimum number of tests each month based on the number of locomotive miles. In the last half of 1923 this minimum requirement was, for the whole System, 300,000; actual number of tests made, 493,000.

## Net for 1923, \$977,543,590

WASHINGTON, D. C.

**C**CLASS I railroads, operating a total mileage of 235,667 miles, earned in 1923 a net railway operating income of \$977,543,590, or 5.10 per cent on their tentative valuation plus additions and betterments up to January 1, 1923, according to complete reports for the year filed with the commission and compiled by the Bureau of Railway Economics.

In the Eastern District the rate earned was 5.40 per cent; in the Southern District 5.84 per cent and the Western District 4.57 per cent.

The same roads in 1922 earned a net operating income of \$776,880,592, which was at the rate of 4.14 per cent.

Operating revenues in 1923 amounted to \$6,356,883,424, an increase of \$736,481,703 or 13.1 per cent over the year before, while the operating expenses amounted to \$4,944,011,124 or an increase of \$486,388,653 or 10.9 per cent.

Of the total operating revenues for the year those derived from freight totaled \$4,624,390,900, or an increase of 15.3 per cent over those for 1922. Passenger revenues for the year totaled \$1,147,751,691, or an increase of 6.6 per cent.

Class I carriers during 1923 expended for maintenance of way and structures \$821,380,867, an increase of \$85,199,655, or 11.6 per cent over such expenditures in 1922. For maintenance of equipment \$1,474,931,328 was spent, an increase over the year before of \$214,934,414, or 17.1 per cent. Transportation expenses totaled \$2,350,988,604, as compared with \$2,176,016,899 for 1922, or an increase of \$174,971,705, or 8 per cent.

The railroads also paid \$336,399,600 in both state and federal taxes, or a daily average of nearly \$922,000. Compared with 1922 the amount expended for taxes was an increase of \$30,920,083, or 10.1 per cent.

Compilations by the Bureau of Railway Economics show the annual rate of return for the carriers for 1923, based on their property investment, to have been 4.47 per cent.

Earnings by sub-districts for the year 1923 with the percentage of return based on property investment in each district follows:

New England Region.....	\$21,700,487	2.30
Great Lakes Region.....	191,212,818	5.36
Ohio-Indiana-Allegheny .....	212,723,389	4.81
Pocahontas Region .....	47,696,463	5.73
Southern Region .....	129,749,050	4.95
Northwestern Region .....	112,130,409	3.42
Central-western Region .....	186,677,198	4.49
Southwestern Region .....	75,653,776	3.67

The railroads in the Eastern District had a net operating income in 1923 of \$473,333,157, or 5.4 per cent, as compared with \$342,447,567, or 4 per cent, in 1922. In the Southern District the net operating income was \$129,749,050, or 5.84 per cent, as compared with \$109,992,301, or 5.06 per cent, in 1922.

In the Western District the net operating income in 1923 was \$374,461,383, or 4.57 per cent, as compared with \$324,440,724, or 4.03 per cent, in 1922.

For the month of December Class I carriers earned at an annual rate of return of 4.43 per cent, which in dollars represented a net operating income of \$69,580,697, as compared with \$79,037,486 in December, 1922, or a return of 5.14 per cent. Operating revenues in December totaled \$494,456,428, a decrease compared with December the year before of 3.7 per cent, while the operating expenses totaled \$388,231,951, or a decrease of 4.1 per cent. Carriers in the Eastern District had a net operating income in December of \$27,781,828, which was at the annual rate of return of 4.32 per cent, compared with \$33,491,345, or 5.33 per cent, during the same month the preceding year. In the Southern District the carriers had a net operating income of \$11,463,778, or 4.83 per cent, compared with \$13,118,184, or 5.64 per cent the year before, while in the Western District the net

operating income for December, 1923, was \$30,335,361, or 4.41 per cent. In December, 1922, it amounted to \$32,427,957, or 4.80 per cent.

Forty-nine Class I railroads in December operated at a loss, according to the reports, of which 23 were in the Eastern District, 6 in the Southern and 20 in the Western. In November 24 roads had operating deficits.

## Office Efficiency— An Important Problem

By Victor Cahalin

IT IS difficult to get railway officers to consider the problem of office efficiency and the engineering of the clerical forces as a separate and distinct issue. High calibre railroad men are often amazed when shown a chart illustrating the bad features of the office arrangement of their own department. A man who would detect at once an undue amount of empty mileage seldom has eyes to see practically the same kind of waste in his own office. A good office arrangement is the basis of office efficiency.

We often hear the complaint that an office is overcrowded, and it is agreed "Yes, we ought to have more room"—when, as a matter of fact, what is needed is not more space but a plan showing how the available space can be used to the best advantage.

Another complaint that we have always with us is that the work is too heavy—more help needed. When the situation is analyzed, in the proper manner, as a general rule it will be found that what is needed is not more help but better, more direct methods of handling thus avoiding duplication, and securing a proper distribution of the work. However, the situation is seldom properly analyzed. It is easier to agree that more help is needed, but—"Well, we will have to get along—just do what we can," and there the matter rests and has been resting for years. When the office force is increased or decreased it is usually done in a haphazard manner.

And is it not reasonable to assume that the clerical work of an office is carried on in a manner in keeping with the arrangement? When an office is so arranged that the personnel of the department must take circuitous routes about the office it is seldom found that the work is being handled in a direct and efficient manner.

A case recently analyzed where a very poor arrangement prevailed showed much duplication in the handling of the work, reports received and issued long after they had outlived their usefulness, and waste of supplies as well as waste of time and energy. One instance that stands out in this analysis is the expensive error of employing a typist, at a salary in the neighborhood of \$100 a month, to make second copies of schappagraph work where the required number of duplicates could not be obtained from the first copy. These second copies could have been made at the same time as the original, by the same operator, if schappagraph carbon paper was used as well as a schappagraph typewriter ribbon. This paper had been in use by other departments of the company for years prior to this occurrence, but this chief clerk had never heard of it. However, an error of this kind might occur where standard practice did not prevail, even if the chief clerk was a fairly good office manager but not familiar with the best methods. What leaves this particular instance open to criticism is that during the period that the extra typist was employed (about two months) one of the stenographers in this office was spending four hours a day on shorthand and typewriter exercises. She would probably have preferred actual work, but in lieu of this she had to do

something to appear busy. Judging according to appearances, and the noise of her typewriter, she was earning her salary. In business as well as in politics many persons are still prone to confuse mere noise with the attainment of results.

In the case under consideration, if a requisition for the typist, stating the exact nature of the work to be performed, had been sent to an engineer in charge of the clerical forces, or the employment manager, or personnel director, or whatever you are pleased to call him, so long as he understood this phase of the company's business, he would have seen to it that a five dollar box of schappagraph carbon paper was furnished instead of the \$100 typist.

The case illustrated is typical of the majority of railroad offices. One finds various combinations of the factors that make for inefficiency and waste. Of course, in some cases they are more apparent than in others, but they exist in a greater or less degree in most of the railroad offices of the country.

The outstanding need of the railroads today is for persons who will specialize on this particular subject—personnel management and office efficiency. The officers who are busy "running the railroad" should not be held accountable for office details.

The function of the personnel manager or efficiency engineer is not to manage the office over the heads of the executives in charge, but to co-operate with them; to analyze the situation and point out (as tactfully as possible, of course) how maximum results may be obtained.

The executive should choose the employees for his own department, but it is the duty of the personnel director to grade and sort applicants and recommend the employment of those most suitable. In other words, the personnel director should try to avoid letting round pegs get into square holes, and also assist, as far as possible, in placing employees already within the organization in the positions for which they are best adapted.

Even though a rigid specification covering work on various desks may not be practical, that is no reason why there should be no definite, classified knowledge of the particular functions of each desk showing the maximum and minimum performance. There may be fluctuation in the work passing over a certain desk, but an index card on file in the personnel manager's office showing the normal requirements is a valuable check and gives a fairly definite idea of what constitutes a standard performance.

When the work is properly graded and distributed there is then some foundation on which to base rates. Standardized rates may not be practicable at once but will be the natural and inevitable result of a more thorough knowledge of the situation. It will be apparent to both the employer and the employee that the rates to be just must be based upon the quantity and quality of work performed.

The matter of office efficiency on the railroads is a big problem, but one that can be handled systematically and gradually. Not much can be done in a week or a month, but in six months or a year a vast improvement can be made; and in two or three years this branch of the service can be quite thoroughly organized, systematized and standardized.

In the evolution of the railroads the various departments have been organized as the need for them has been recognized. It is now becoming apparent to the more progressive men who govern the destiny of the railroads that the matter of office efficiency and the engineering of the clerical forces must be given attention.

The man or woman who undertakes to organize this movement on any railroad must have the vision to see the problem as a whole and a comprehensive understanding of the situation as well as a practical knowledge of the various details involved.

# Administration of Section IV, Commerce Act

## Interstate Commerce Commission Reports on Investigation Ordered by Senate

WASHINGTON, D. C.

THE INTERSTATE COMMERCE COMMISSION has submitted a report to the Senate in response to Senate Resolution No. 472, adopted March 3, 1923, in which the commission is directed to investigate and report to the Senate information relating to the administration of section 4 of the Interstate Commerce Act.

The paragraphs of the resolution were taken up in order in the report in part as follows:

(a) Applications for relief from the operation of section 4 were filed as follows:

Between June 29, 1906, and June 18, 1910..... None  
Between June 18, 1910, and February 28, 1920..... 11,442  
Between February 28, 1920, and November 1, 1923..... 1,071

It will be noted that during the first period mentioned no applications were filed. The amendment of June 18, 1910, eliminated the words "under substantially similar circumstances and conditions," thereby giving full effect to the prohibition of the section, subject only to the power of the commission after investigation to grant relief in special cases. Under the terms of the amended act the carriers were given until February 17, 1911, in which to file applications covering existing departures. Such applications when filed protected them until we could investigate and act upon them. Between the adoption of the amendment and February 17, 1911, 5,031 applications were filed, many of them being exceedingly voluminous, involving thousands of rates and many different situations.

The following table shows the information requested regarding the disposition made by the commission of fourth section applications from June 18, 1910, to February 28, 1920, the date of the enactment of the transportation act, and from the latter date to November 1, 1923:

	Heard	Not heard	Total applications
Applications granted in whole or in part after investigation, entirely disposed of..... (A)	234	4,791	5,025
Applications granted on and after February 28, 1920, after investigation, to meet water competition..... (B)	66	484	550
Orders granting relief after investigation, but disposing only of portions of applications... (A)	3	1	4
Applications denied entirely after investigation... (B)	534	...	...
Orders denying relief after investigation, but disposing only of portions of applications... (A)	187	...	...
Applications undisposed of, filed on or before February 17, 1911, for authority to continue rates in contravention of the provisions of Section 4..... (B)	705	2,489	3,194
Current applications not acted upon..... (A)	383	816	1,199
Applications withdrawn or abandoned..... (B)	704	...	...
Total applications.....	216	...	...
	...	...	1,329
	...	...	153
	...	...	1,059
	...	...	12,513

A—Decided prior to February 28, 1920, the date section 4 was amended by the Transportation Act.

B—Decided on and after February 28, 1920 (except applications granted to meet water competition).

We have required that all applications be supported by a sworn statement of facts.

(b) As shown under paragraph (a) above, four applications have been granted since the date of the enactment of the transportation act permitting the establishment of rates in order to meet water competition. During the same period 550 other applications were granted, all of which, with a few exceptions, were to meet some form of rail competition. The exceptions are such special or emergency applications as described under (c) *infra*.

(c) Between the enactment of the transportation act and November 1, 1923, 554 applications were granted. In 9 of these cases the relief was authorized in connection with the establishment of emergency rates on livestock and feed for a temporary period on account of drought in New Mexico and other western states during the fall of 1922.

A large number of the 485 applications granted since the amendment of 1920 without a hearing requested relief for the temporary period which might elapse before we had passed upon the general applications filed on or before February 17, 1911. Many of these so-called temporary applications requested authority to establish from new points of manufacture or production similar rates to those in effect from existing points of manufacture or production which were protected by general applications on file with us but

not yet acted upon; to establish rates via new lines or new routes the same as rates already in effect via competing lines which were likewise protected by general applications not yet acted upon; to establish rates on commodities which were analogous to or were generally accorded rates with relation to other commodities of a similar nature, which other commodities were protected by general applications not yet acted upon—for example, providing rates on cotton towels differentials higher than rates on cotton fabrics; to add articles to a commodity description such as nut locks or washers to railroad track material, or peanut or soya bean oil to cotton seed oil; and to provide for additional methods of packing in connection with commodity rates already established and protected by general applications—for instance, to provide the same rates on oranges in fibreboard boxes as on oranges in standard crates. Where applications of this character have been granted for the temporary period pending action upon the general applications protecting the basic commodity or basic situation, we have not required proof that the rates to the more distant points were reasonably compensatory, the commission being of the opinion, although not unanimous, that our failure to grant such temporary relief would subject the applicants to unjust discrimination where their competitors were protected, until the commission could pass upon the protecting applications; and that to require the applicants to offer proof that the rates they proposed were reasonably compensatory when no such proof has heretofore been offered as to the rates of their competitors for the reason that the particular portions of applications protecting such situations have not yet been assigned for hearing or acted upon, would subject the applicants to still further unjust discrimination.

In all other cases in which relief was granted the majority were satisfied upon the proof presented, or from facts developed in the course of our investigations, that the rates were reasonably compensatory for the service performed, and in the four cases where such relief was granted upon the ground of water competition, that the competition was "actual and not merely potential."

(d) The names of the railroads that have made such applications are shown in Appendix A, attached hereto.

Broadly speaking, the primary purpose intended to be accomplished by the filing of these applications is to enable the applicant carriers to meet, at points served by them, competitive conditions existing at such points, thereby securing traffic which they could not otherwise obtain, and to charge higher rates at intermediate points where such competition is absent. More specifically, applications may be divided, according to the purpose sought to be accomplished, into three classes:

1. To meet rail competition.
2. To meet water competition.
3. To meet market competition.

An example of the first class is an application by a railroad having a circuitous route for authority to meet the rate of the short route between points common to both. The second class includes applications by railroads operating from one port to another to meet at such ports the rates of the water lines. Market competition may be either by rail or by water. An example of this class is that of a railroad serving a producing territory seeking to meet the rates of other carriers, either rail or water, from another producing territory to a common market. Comparatively few applications are based on market competition exclusively, but such competition is often an important element in applications of the first two classes. There have also been filed a few applications not coming within any of these classes such as the emergency applications mentioned under paragraph (c) and applications filed in connection with a proposed readjustment of rates having for its object the assistance of railroads in financial distress.

The results actually accomplished by the granting of such applications, in our opinion, have been:

1. That the railroads which have been granted fourth section relief have, in most cases, accomplished their purpose of securing a portion of the traffic between the competitive points, thereby obtaining additional revenue.
2. That shippers located at the competitive points have enjoyed the benefit of an additional route or an additional market, and of such other advantages as result from competitive service.
3. That prejudice is thereby created at intermediate points to which higher rates are permitted, but not, in the opinion of the majority, undue prejudice.

The question of the effect on other railroads of such applications

where granted was included in our order of investigation, but the evidence on this point is general in character. The effect of granting an application to meet rail competition has been to take from the competing railroad so much of the traffic between the competitive points as was thereby secured by the applicant railroad. The granting of an application to meet water competition has in some instances the effect of taking traffic from other rail carriers which might participate in a portion of the haul from an interior point to the port for movement beyond by water.

(e) Generally speaking, the evidence shows that the localities which have been most interested in having the railroads make such applications are those at which competitive conditions exist. For example, in the case of an application filed by a carrier having a circuitous route for authority to meet the rate of the short line between two points, those competitive points would be interested in the additional service thus afforded. In the case of an application for authority to meet water competition the ports would be similarly interested. A complete list of the localities interested in these two types of application would include most of the important junction points and ports of the country.

The interest of localities in applications into which the element of market competition enters is much more pronounced and widespread than where that element is absent.

The record establishes that in a majority of instances such applications have been filed, not as the result of any pressure from shippers or localities, but because the railroads conceived that their best interests would be served thereby. But because of the possibility that different conclusions might be reached as to whether the interest displayed by shippers and localities and their requests upon carriers for the establishment of the rates desired by them come within the meaning of the word "pressure" as used in the Senate resolution, we deem it advisable to set forth concrete examples of the statements made by a number of the witnesses and of the letters gathered by our special agents, so that the Senate may have before it all the information we have been able to obtain which might be considered as falling within the scope of paragraph (e) of the resolution.

Then follows a series of extracts from the record and a list of carriers that have filed applications for fourth section relief.

## University of Illinois Offers Course in Transportation

By George Chapin

Bureau of Business Research, University of Illinois,  
Urbana, Ill.

EVERY TENTH MAN at the University of Illinois is learning about the problems of the railroads and the peculiarities and difficulties of railroad management. He is one of 700 students enrolled in at least one of the courses in the Department of Transportation, which each year prepares 30 or more students for careers in the traffic and operating departments of railroads. No other university or college, as far as is known at Illinois, has an entire department devoted to this training.

The foundation for the Department of Transportation was made before the World War by Professor Ernest R. Dewsnap, an Englishman, who came to Illinois in the fall of 1907 to take charge of the new railway administration courses. Professor Dewsnap carried on this work until 1918, when he obtained a leave of absence to engage in special transportation service for the British War Office. After the armistice he returned to Illinois but remained only one semester, after which he resigned to become a professor at the University of Liverpool, England.

His departure resulted in the reorganization of the work into a department of transportation in 1921, with C. C. Herrmann as senior instructor. This placed the work in charge of a man who had been one of Professor Dewsnap's best students and who had obtained considerable practical experience in the employ of railroads after graduation. The first year of the reorganization he offered both of the courses presented in the curriculum. Three more courses were added

the next year; today there are eight courses and a staff of four instructors.

A further development of the department is assured by the recent gift of United States Senator William B. McKinley of Illinois for an endowed professorship in railway economics at an annual salary of \$7,000. This means the division of the department into two separate branches—railway economics and railway operation. It is expected that the change will become effective next fall.

The transportation instructors at Illinois impress upon their students the fact that college men cannot evade an after-college apprenticeship if they expect to follow railroading. They further emphasize the fact that operating a railroad is a profession with as large opportunities as are offered in many other lines for which men are trained at college. These instructors are inclined to blame both college authorities and railroad officers for what has been until recently the prevailing attitude of the average college student toward a railroad career.

The universities, they explain, failed to offer the specialized training required for railroad work and the railroads failed to encourage or to co-operate with the universities in providing an avenue for the student in the railway field. The pioneer work inaugurated by Professor Dewsnap, however, is now bearing fruit. Positions are ready for all Illini who finish the course in transportation. Although they must serve an apprenticeship they are assured of rapid advancement if they are hard working and ambitious. This is true because the graduates of the course have supplemented their training for railroad work with a thorough background of economics, history, business organization and accounting. To become a graduate of the Transportation Department it is necessary to take all eight of the courses. An outline of the nature of these subjects follows:

*Transportation System of the United States:* The development of the economic problems of railway and other transportation in the United States.

*Rates and Regulation:* The history and theory of rates, and the conditions covering the shipment of freight, routing, claims, and commission procedure.

*European Railroads:* The history and public policies of the railroads of Continental Europe and England.

*Railroad Finance.*

*Railroad Organization and Working:* The departments of American railroad organization and their functions.

*Terminals and Trains:* A study of freight and passenger terminals and terminal management.

*Ocean Shipping:* A study of the principles of ocean transportation; also ocean ports and terminals.

*Railroad Problems:* A study of the important railroad problems, such as railroad location, maintenance and replacement.

The Department of Transportation at the University of Illinois is a unique undertaking and the widespread interest that is being manifested by railroad officers as they learn about the department is indicative of its practical nature. It seems destined to become of service to them by pointing the way to a new source of recruits for the railroad profession.

FREIGHT RATES CANNOT BE REDUCED, until taxes and cost of operation are reduced; this is the burden of the latest advertisement of the Atchison, Topeka & Santa Fe appearing in the newspapers. The Santa Fe received in 1922, \$1.45 for hauling the same amount of freight the same distance that it received \$1 for in 1915, and \$1.60 for hauling passengers the same distance it received \$1 for in 1915. But expenses increased much faster. Aggregating all operating expenses, it paid, in 1922, \$2.05 for the same number of hours worked and the same quantity of materials and supplies as it paid \$1 for in 1915. It paid \$2.90 in taxes in 1922 for every \$1 paid in 1915. Cost of operation cannot be substantially reduced until prices of labor and materials come down; and the price of labor and material cannot be reduced until the cost of living is reduced.

# General News Department

The Air Brake Association will hold its next convention May 6, 7, 8 and 9, in Montreal, P. Q.

C. E. Brooks, chief of motive power of the Canadian National Railways, has, according to press dispatches, arrived in Sweden for an inspection of the Swedish railways and railway equipment manufacturing plants.

The "Stourbridge Lion," most noted steam locomotive in American history, having been the first to turn a wheel on this continent, made its historic trip on August 8, 1829, not 1827, as stated in these columns last week, page 361.

The Illinois Central is to present to each employee on the retired list and to pensioners, a gold button inscribed with the person's name and service record, with the emblem of the road. Women employees retired on pension will be given a gold pin of similar design.

The Western Railway Club will hold a meeting at the Auditorium Hotel, Chicago, on February 18, at which the discussion of the paper by L. C. Bowes, production engineer of the Chicago, Rock Island & Pacific, will be continued. H. F. Atwood will also speak on the constitution of the United States.

The Interstate Commerce Commission has granted the petition of the Illinois Central for a modification of its automatic train control order so as to permit an installation on the Illinois division, between Champaign, Ill., and Branch Junction, in lieu of the full passenger Engine division prescribed in the order.

At Chilliwack, B. C., on February 12, an eastbound passenger train of the Canadian National fell through a bridge, over the Frazer River, which had been weakened by a flood, and 23 persons—passengers and trainmen—were injured. The train was moving at low speed and none of the personal injuries are considered fatal.

The Southern Pacific is preparing to hold a spring athletic field meet at Houston, Texas, for the benefit of employees. The Texas and Louisiana lines will be divided into competing units. An athletic council is composed of Dr. F. A. Waples of the hospital department, John Lansdale, valuation engineer, and G. B. Herbert, auditor of the Louisiana lines.

Radio was used by the Chicago & North Western in communicating with trains in northern Wisconsin on February 5, when a heavy snow storm cut off all wire communication. In several instances, reports from trains which were stalled in snow drifts were broadcast by local stations and relayed by wire to North Western officers by Chicago receiving stations. Messages for these trains from Chicago headquarters were then sent out by the Chicago radio stations. Radio reports were received from a Minneapolis, St. Paul & Sault Ste. Marie train at Waupaca, Wis., and from North Western trains at Reedsville, Waukesha, Sheboygan, Green Bay, and Manitowoc.

## Purchasing Agents to Meet in Boston

The Tenth Annual International Purchasing Agents' Convention and "Informashow" will be held in Boston during the week of May 19, 1924, under the auspices of the National Association of Purchasing Agents. An attendance of some 3,000 is expected.

## G. N. Employees' Club to Publish Magazine

The Great Northern Railway Club, which is composed of male employees of the Great Northern, at St. Paul, 18 years of age and over, and which was organized in September, 1923, has published the first issue of an official organ of the club, known as "The Semaphore," to be published monthly. Its editor is W. N. S. Ivins, assistant commissioner in the law department of

the road. Officers of the club are: President, James T. Maher, right of way, land and tax commissioner; vice-presidents, George H. Hess, Jr., controller, and Edward F. Flynn, assistant to vice-president and general counsel; secretary, Clifford H. Trembly, of the traffic department, and treasurer, John H. Boyd, assistant controller.

## D. T. & I. Makes Favorable Showing for 1923

Henry Ford's Detroit, Toledo & Ironton made a good showing of net railway operating income in 1923 for the first time since he acquired the road, although his deficits have been less than the road was accustomed to in previous years. The net for the year was \$1,786,924, an increase of \$1,945,908 as compared with 1922, and the report to the Interstate Commerce Commission indicates that this was due both to increases in traffic and a heavy reduction in maintenance expenditures. The operating revenues for the year were \$10,417,412, an increase of \$1,412,938, while the operating expenses were \$6,766,472, a decrease of \$737,170. Maintenance of way expenditures showed a reduction of \$252,128 and maintenance of equipment a reduction of \$691,243, while transportation expenses increased \$63,469. The operating ratio for the year was 65 as compared with 83.3 in 1922, while the maintenance ratio was 28.7 as compared with 43.7. For the month of December the road showed a deficit of \$8,367, as compared with a net in 1922 of \$147,940. The revenues were \$783,367, an increase of \$21,756, and the expenses were \$641,047, an increase of \$216,885. Maintenance expenses showed an increase in December.

## Status of Dispatchers and Supervisory

### Agents as Subordinate Officials Defined

The Interstate Commerce Commission, following a hearing on December 5, 1923, has issued revised regulations defining the classes of employees to be designated "subordinate officials," as that term is used in the labor provisions of the Transportation Act, which change the regulations pertaining to train dispatchers and supervisory agents to read as follows:

"Train dispatchers: This class shall include chief, assistant chief, trick, relief and extra dispatchers, excepting only such chief dispatchers as are actually in charge of dispatchers and telegraphers and in actual control over the movement of trains and related matters, and have substantially the authority of a superintendent with respect to those and other activities. This exception shall apply to not more than one chief dispatcher on any division.

"Supervisory station agents. The duties and responsibilities of supervisory station agents vary so widely that they can not all be consistently designated subordinate officials. This class will be subdivided, therefore, as follows:

(a) Supervisory station agents who, in addition to their supervisory duties, are required to perform work usually performed by telegraphers, telephone operators, ticket sellers, bookkeepers, towermen, levermen, or similar routine duties are employees and, although they may have supervision over one or more station employees, can not be properly designated subordinate officials.

(b) Except those referred to in the next succeeding paragraph, supervisory station agents whose duties are wholly supervisory and who are not required to perform routine office work, as outlined in the preceding paragraph, are designated as subordinate officials.

(c) Supervisory station agents at large and important stations whose duties are wholly supervisory, and who are of necessity vested with greater responsibilities, duties and authority than the agents hereinbefore classed as subordinate officials, may be designated officials and excluded from the class of subordinate officials."

The definitions include all of the classes of employees whose claims to recognition as "subordinate officials" were presented at

the hearings. The list of subordinate officials prescribed may be enlarged or restricted, the order says, after due notice and hearing, if and when occasion warrants.

The hearing was held on petition of the train dispatchers' association.

### New Buildings for Railroad Y. M. C. A.

Several new buildings were completed for the use of the Railroad Y. M. C. A. during 1923. These included the following:

Bellefontaine, Ohio (Big Four) .....	\$105,000
Gary, Ind. (E. J. & E.) .....	55,191
Groveland, N. Y. (D. L. & W.) .....	30,000
Hazard, Ky. (Louisville & Nashville) .....	100,000
Hoboken, N. J. (D. L. & W.) .....	190,000
Meridian, Miss. (Southern) .....	166,000
Sious Lookout, Ont. (Canadian National) .....	75,000

During the year the association at Baltimore, Md., on the Pennsylvania Railroad, rented a new building. A new association on the Chesapeake & Ohio at Newport News, Va., took over an old building, and the Pennsylvania Railroad Y. M. C. A., at Trenton, N. J., joined by special arrangement with the city Y. M. C. A. in using a new building. The Big Four at Cincinnati, Ohio, purchased a building which has been rented.

In addition to these new buildings, a number of important additions were made to old buildings, as indicated in the following table:

Bush, Ill. (Missouri Pacific) .....	\$3,000
Connellsville, Pa. (B. & O.) .....	75,000
Chicago (Northwestern) .....	4,000
Denison, Texas (M. K. & T.) .....	15,000
Hollidaysburg, Pa. (Pennsylvania) .....	75,000
Mart, Texas (I. G. N.) .....	2,000
Palestine, Texas (I. G. N.) .....	5,000
Peru, Ind. (C. & O.) .....	11,000
Philadelphia, Pa. (Pennsylvania, Broad Street Annex) .....	.....
Poplar Bluff, Mo. (M. K. & T.) .....	.....
Sharonville, Ohio (Big Four) .....	34,000

### Congress Asked to Investigate

#### Right of Railway to Federal Land

Secretary Work of the Department of the Interior and Secretary Wallace of the Department of Agriculture recommended to Congress on February 13 that the right of the Northern Pacific to acquire approximately 3,000,000 acres of government land in Idaho, Montana and Washington under the terms of old land grants be made the subject of an investigation by that body.

The two cabinet members asked that a joint resolution be considered withholding the issuance of any further land patents to the Northern Pacific until after Congress shall have made a full and complete inquiry into that company's land grants for the purpose of considering legislation to meet the respective rights of the railway company and the United States government. This request was made in the form of letters to Senator Lenroot and Representative Sinnott, respective chairmen of the Senate and House committees on public lands.

The government land in question is mainly located within National Forest areas in the states mentioned, and the railway company is asserting its claim to these lands under the provisions of the land grants made by Congress on July 2, 1864, and May 31, 1870, commonly known as the Northern Pacific land grants. These grants were made for the purpose of aiding the railway company in the construction of its lines from Wisconsin to the Pacific Coast. Secretary Wallace, under whose direction all national forests are administered, contends that Congress has authority to save most, if not all, of this national forest acreage to the government if it desires to investigate the entire matter and pass the necessary legislation.

The grants as made by Congress in 1864 and 1870 divided the granted areas into primary limits and first and second indemnity limits, the latter to be used to make up any losses of acreage in the primary limits by reason of Indian reservations, mineral classifications, homesteaders' rights, or other prior liens on such land.

The present claims of the Northern Pacific are based on a decision of the United States Supreme Court which held that the government could not reserve as against the railway company any of the land within the so-called first and second indemnity limits needed to satisfy the acreage which the railway company was to receive out of the so-called primary limits. Such reservations the government attempted to make but the Northern Pacific contested the government's action and a legal action begun in 1917 was decided against the government by the Supreme Court in 1921.

The right of the government to make reservations of public do-

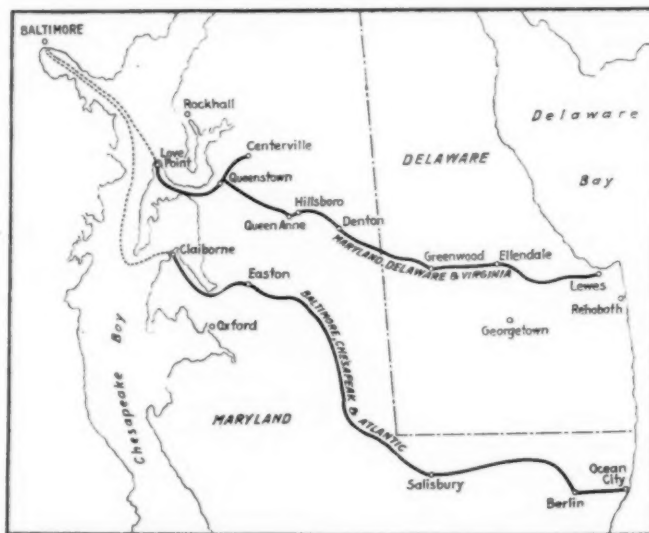
main included in the Northern Pacific indemnity land grants prior to the actual selection thereof by the railway company had for many years been the accepted opinion of the administrative officers of the government. Much of the land involved is heavily forested and the government has expended money in its protection and administration.

Under the decision of the Supreme Court the Interior Department has been engaged in making a compilation of the acreage due the railway company by reason of the original grants. A tentative adjustment based upon this compilation shows the original grants to be deficient to the extent of approximately 3,900,000 acres. If the railway company's contention is finally upheld about 3,000,000 acres of present national forest acreage will be involved in the indemnity selections.

Secretary Wallace believes that before the Northern Pacific is entitled to take title to these national forest areas it must show that it has complied with its portion of the contract which in similar cases the Supreme Court has held to be a law as well as an agreement. Secretary Wallace further believes that many facts are involved in the case which create substantial equities in favor of the government. He believes these equities more than offset any present shortage that may exist in the gross acreage of the original grants and that an inquiry by Congress would prove his contentions to be well-founded.

### Baltimore & Eastern Railroad Co.

This company has been organized in Maryland as successor to the Maryland, Delaware & Virginia Railway Company, the property of which was sold under foreclosure. The new company took charge on February 1 and now operates trains, as did the old company, between Love Point, Md., and Greenwood, Del. This line, and that of the Baltimore, Chesapeake & Atlantic, both controlled for many years past by the Pennsylvania Railroad, have been the subject of protracted conferences in behalf of the citizens of the towns along the line, with the authorities of the state of Maryland, and the officers of the Pennsylvania Railroad; and various plans have been



proposed for rehabilitating sections of the lines which are unprofitable. One of the most definite schemes was to abandon one of the two boat lines connecting with Baltimore and to run trains through from Love Point, by way of Queen Anne and Easton, to Ocean City, using a 12-mile section of the Oxford branch of the Pennsylvania between Queen Anne and Easton; but the Baltimore & Eastern does not seem disposed to do anything in this connection, and the combination plan is still in abeyance. According to the Official Guide, the Baltimore & Eastern runs one train a day each way, except Sunday, between Love Point and Greenwood with connection to Centerville; and an additional train, one day in the week, between Love Point and Centerville. The Baltimore, Chesapeake & Atlantic operates two trains a day each way, except Sunday, between Claiborne and Ocean City. All trains have boat connection to Baltimore except the morning train to Ocean City and the afternoon train from Ocean City.

## Traffic News

The Louisiana Southern has replaced its steam passenger service between New Orleans, La., and Shell Beach and between New Orleans and Pointe-a-la-Hache, with motor car service.

The Southern Pacific has discontinued its steamship service between New Orleans and Havana, which it has operated for over fifty years, and has sold its two steamships used in this service to the Munson Lines.

The Canadian National has now running between Toronto, Ontario and Winnipeg, Manitoba, tourist sleeping cars in which there is a lunch counter, and it is intended to equip a number of cars in this way.

A. C. Johnson, vice-president of the Chicago & North Western, with headquarters at Chicago, has been elected chairman of the Western Traffic Executive Committee, succeeding C. E. Spens, vice-president of the Chicago, Burlington & Quincy, resigned.

The St. Louis-Southwestern, beginning February 18, will operate a "Better Cotton demonstration train" for a two weeks' tour of Texas. The train will be accompanied by members of the United States Department of Agriculture, the State Department of Agriculture, and the Texas Agricultural and Mechanical College.

In the United States Court at Cleveland, Ohio, on January 31, indictments on charges of undue preference in extending credit to shippers were returned against the Pennsylvania and the Baltimore & Ohio. The Pennsylvania is charged with having delayed the collection of freight bills from the Goff-Kirby Coal Company; the Baltimore & Ohio is charged with a similar offense in connection with the Otis Steel Company and Swift & Co.

The Interstate Commerce Commission has set aside its order in the interchangeable mileage ticket case, which had been perpetually enjoined by the federal court for the district of Massachusetts in a decision which was recently affirmed by the Supreme Court of the United States. The National Council of Traveling Salesmen's Associations and the Federation of Commercial Travelers have filed petitions with the commission asking for a rehearing of the case and a further order by the commission.

The Southern Pacific is making an effort to interest other western carriers in a plan to sell home seekers' excursion tickets from the Middle West to points in California, Oregon, Nevada, New Mexico and Arizona. It is proposed to make the fare for the round trip equal to the one way fare plus \$5. The tickets would be sold on the first and third Tuesdays of each month from March to December inclusive, for parties of 25 or more traveling together. Fifteen days will be the final return limit.

The Illinois Central will conduct its sixth mid-winter all-expense tour from Chicago to New Orleans, La., on March 1 for the Mardi Gras festivities of March 4. A rate of \$95 includes railroad and Pullman fare from Chicago to New Orleans and return, sleeping car accommodations at New Orleans in lieu of hotel accommodations, meals en route, an automobile sight-seeing trip at New Orleans, a steamboat excursion on the Mississippi river through the harbor of New Orleans and an automobile sight-seeing trip through the National Military park at Vicksburg, Miss.

The ten gasoline motor passenger cars recently ordered by the New York, New Haven & Hartford are intended for use on various lines in New England and New York as follows:

Plymouth, Mass., and Middleboro;  
State Line, Mass., and Great Barrington;  
Pittsfield, Mass., and Great Barrington;  
Framingham, Mass., and Marlboro;  
Framingham and Mansfield;  
New Bedford, Mass., and Mansfield;  
Providence, R. I., and Hope;  
Millerton, N. Y., and Poughkeepsie (Central New England Railway);  
Franklin, Mass., and Valley Falls, R. I.;  
Wickford Landing, R. I., and Wickford Junction;  
Ridgefield, Conn., and Branchville;  
Suffield, Conn., and Windsor Locks.

## Freight Charges Small Factor in Price of Livestock

Freight charges are a relatively small factor in the price paid to the producer of live stock, according to a bulletin issued by the Bureau of Railway Economics, based on a study of actual representative live stock sales. Out of 834 carloads shipped from 27 different states and comprising 13,161 head of cattle and calves, 19,585 hogs and 24,682 sheep sold at the big central markets on three different days at intervals of three weeks in October and November, freight charges represented only 6½ per cent of the total price paid, while the net proceeds to the producer or seller at the point of shipment were 90.2 per cent, the 3.3 per cent remaining representing other costs of distribution.

In other words, out of every dollar paid for live stock at Chicago, Kansas City, etc., 6½ cents went to the railroads, 3.3 cents represented other costs of distribution, and 90.2 cents were realized by the producer or seller. On cattle and calves alone, freight charges represented 6.9 per cent of the price paid by the purchaser; on hogs, 5.1 per cent; and sheep, 7.4 per cent. Apparently the principal factors influencing the seller's net proceeds are the quality of the stock and marketing conditions. The transportation costs permit of the free movement of live stock to the various marketing centers for a considerable range of territory.

The study indicates that the percentage of the price paid by the purchaser applicable to freight charges varies greatly. The causes for these variations are: First, the differences between kind and quality of live stock; second, underloading of cars; third, difference in freight charges due to varying distances from market. The difference in kind and quality of live stock is most important factor. Differences in quality of stock resulting in price fluctuations are to be found in stock shipped in the same car. For example, in the case of carload shipments from a town in Iowa, arriving at Chicago on November 5, the price on 13 steers varied from \$6.75 to \$9.00 per 100 lb., indicating not only that the quality of the stock varied greatly but was the controlling factor in establishing the price.

## Ton Miles for 1923

The freight traffic of the railroads of the United States for 1923, according to reports filed by the carriers with the Bureau of Railway Economics, amounted to 457,589,846,000 net ton miles, exceeding by 10,311,636,000 net ton miles or 2.3 per cent the total for 1920, which marked the previous record year.

Compared with 1922, this was an increase of 81,637,920,000 ton miles or 21.7 per cent. It was also an increase of 17,588,132,000 net ton miles or 4 per cent over 1918, when freight traffic was greatly stimulated by the war.

In the Eastern district alone, freight traffic amounted to 236,963,042,000 net ton miles, which was an increase of 4.3 per cent over 1920 and an increase of 27.1 per cent over 1922, when freight traffic, particularly in the East, was reduced somewhat due to strikes of both coal miners and railway shopmen. Freight traffic on the railroads in the Southern district amounted to 61,232,629,000 net ton miles, an increase of 9.2 per cent over 1920, and an increase of 18.9 per cent over 1922, while in the Western district it amounted to 159,394,175,000 net ton miles, which was a decrease of 2.7 per cent under 1920, but an increase of 15½ per cent over 1922.

For the month of December freight traffic on the railroads amounted to 33,418,537,000 net ton miles or 7.9 per cent under the same month in 1922. In the Eastern district a decrease compared with the same month the year before of more than 6 per cent was reported, while the Southern and Western districts both reported decreases of more than 9 per cent.

A new high record was also made in 1923 in the average daily movement per freight car, the average for the year being 27.8 miles per day. This exceeded by 1.7 miles the best previous average, which was that for 1917, while it also exceeded by 2.7 miles the average for 1920. Compared with 1922, it was an increase of 4.3 miles.

In computing the average movement per day, account is taken of all freight cars in service, including all cars in transit, cars in process of being loaded and unloaded, cars undergoing or awaiting repairs, and also cars on side tracks for which no load is immediately available.

The average load per freight car in 1923 amounted to 27.9 tons, which was an increase of one ton over the average for 1922, but a decrease of 1.4 tons under 1920, when the average was 29.3 tons, the greatest for any year on record.

## Commission and Court News

### Interstate Commerce Commission

Upon petition of the railroads involved the commission has reopened for reargument, at such time and place as the commission may hereafter direct, the case of the Michigan Traffic League v. Ann Arbor Railroad Company et al, in which a readjustment of class freight rates in Michigan was prescribed; and the effective date has been indefinitely postponed.

#### I. C. C. Without Jurisdiction to

##### Regulate Operation of Passenger Trains

The Interstate Commerce Commission has dismissed a complaint filed by the Wisconsin and Michigan railroad commissions involving the adequacy or inadequacy of passenger train service between points near the border of the two states on the ground that the car service provisions in paragraph 10 of section 1 of the interstate commerce act as amended by the transportation act do not give the commission power to regulate the operation of passenger trains but apply only to the transportation of property.

On February 24, 1918, certain passenger trains were discontinued over the Minneapolis, St. Paul & Sault Ste. Marie between Mellen, Wis., and Bessemer, Mich., and in the summer of 1922 certain passenger trains were discontinued over the Chicago & North Western between Saxon, Wis., and Wakefield, Mich. Both routes pass through Hurley, Wis., a point at or near the Wisconsin-Michigan state line. The distance from Mellen to Hurley is 26.2 miles and from Saxon to Hurley it is 12.7 miles. From Hurley to Bessemer and Wakefield the distances are, respectively, 7.2 miles and 12.9 miles. As a result of their investigation of complaints the state commissions determined that the existing passenger service between the points named is inadequate. The Wisconsin commission contemplates the issuance of orders requiring additional service between Mellen and Hurley, and between Saxon and Hurley, and the Michigan commission contemplates the issuance of similar orders requiring additional service between Wakefield and Ironwood, Mich., the latter being the station in Michigan nearest the state line and 0.9 mile east of Hurley, but they have withheld their orders because of pleas to their jurisdiction entered by defendant railroads who claimed that the I. C. C. alone had jurisdiction. This proceeding was brought primarily to obtain the commission's decision upon the question of its jurisdiction in the premises, but complainants included a prayer that, if it should find that it had jurisdiction, defendants be required to restore service in whole or in part as it formerly existed.

It was conceded that, owing to the arrangement of terminal facilities, the contemplated orders on the part of the Wisconsin commission would result in the trains being operated across the state line to and from Ironwood, Bessemer, or Wakefield, where there are terminal facilities, and that probably the concerted action would accomplish a restoration of the former interstate service, but complainants contend that they have jurisdiction within their respective states and that if, in compliance with their orders under the circumstances of this case, it should suit the convenience of the carriers to operate their trains across the state line, the mere fact of the interstate movement would not deprive them of jurisdiction. In this connection they cited *Mo. Pac. Ry. Co. v. Kans.*, 216 U. S., 262, where, under very similar circumstances, the Supreme Court sustained an order of the Kansas Board of Railroad Commissioners.

Defendants argued that the amendments to the interstate commerce act as enacted in the transportation act, 1920, so altered the law that the decision in the Missouri Pacific case, *supra*, is no longer binding. "It is unnecessary to consider this phase of the matter," the commission says, "inasmuch as the question for determination here is not whether the state bodies have jurisdiction in the premises but whether we have such jurisdiction."

"It seems clear that paragraph 10 of section 1 was enacted to enable us to facilitate and expedite the movement of property.

"Defendants, in effect, also contend that the exercise by us of jurisdiction over passenger-train service is a necessary corollary of our duty to so adjust rates as to provide a fair return upon

the value of the property held for and used in the service of transportation as required under section 15a of the interstate commerce act. The substance of such argument is that a state body may not require a service that involves an expenditure of funds. Such a view is expressly negated by the provision of paragraph (17) of section 1, that nothing in the act shall impair or affect the right of a state, in the exercise of its police power, to require just and reasonable freight and passenger service for intrastate business, when not inconsistent with any lawful order made by us. An order by a state regulating body requiring a service incompatible with the provisions of section 15a might become a matter for action by us under other provisions of the act, but it is obvious that the mere possibility of the issuance of such an order would not operate to enlarge our powers.

"It is scarcely debatable that the broad provisions of the Constitution with respect to commerce among the states vests in the Congress the power to regulate the operation of passenger trains, but as an instrumentality of that body we may exercise jurisdiction only within the limits of the power delegated to us. In the absence of specific language only the most unmistakable evidence of an intention to confer upon us power to act under given circumstances would warrant the assumption of such power through our own construction of the act. We accordingly find that jurisdiction to regulate the operation of passenger trains has not been vested in us. The complaints will be dismissed."

### Personnel of Commissions

L. G. Krause, heretofore engineer in charge of the railroad section of the Bureau of Engineering of the Pennsylvania Public Service Commission, has been appointed assistant chief engineer of the Bureau, in place of H. E. Ehlers.

Henry La Rue, formerly master car builder of the Chicago, Rock Island & Pacific, has resigned as senior inspector of equipment of the Bureau of Valuation of the Interstate Commerce Commission, with

office at Washington, D. C., to devote his time to personal affairs. Mr. La Rue had held that position since 1914, first with headquarters at Chicago and since 1921, when the commission's valuation offices were consolidated, at Washington. While master car builder of the Rock Island, Mr. La Rue served as president of the Western Railway Club and president of the Car Foremen's Association; and in 1910 was a member of the arbitration committee of the Master Car Builders' Association.



Henry La Rue

### State Commissions

A brief, protesting against the proposed abandonment of the Muscatine, Burlington & Southern by the present receivers, was filed with the Iowa Board of Railroad Commissioners on January 26, by the Burlington Shippers' Association and other shippers and citizens located on the railroad. It is claimed in the petition that no effort has been made to run the road in good faith.

### Court News

#### Ordinance Limiting Speed Held Reasonable

The Missouri Court of Appeals holds reasonable an ordinance of a town of 225 inhabitants limiting the speed of trains to 15 miles an hour and requiring locomotive bell to be rung continuously while passing through the town.—*Youtsey v. Chicago, R. I. & P.* (Mo. App.) 251 S. W. 468.

## Labor News

It was announced this week at Cleveland, Ohio, that the New York Central had agreed with representatives of the Switchmen's Union of North America on a general advance in wages of switchmen of about five per cent.

Certain employees of the Canadian Pacific, mainly clerks, came to an agreement with the officers of the road on February 1, closing negotiations which began in October. The request for a general increase of pay is postponed indefinitely, but the men secured some favorable changes in the rules.

The action of W. G. Lee, president of the Brotherhood of Railroad Trainmen, in ousting 881 members of that organization for their participation in the unauthorized strike of 1920, has been upheld by the Court of Appeals at Cleveland, Ohio. The suit filed against the officers of the brotherhood in behalf of the suspended members, which asked appointment of a receiver to take over the property and funds of the brotherhood, was dismissed.

Opposition to the confirmation by the Senate of the nomination of George B. Christian, former secretary to the late President Harding, as a member of the Federal Trade Commission, has been expressed by representatives of the railroad labor organizations at a meeting in Washington. In communications forwarded to President Coolidge and to Chairman Smith of the Senate committee on interstate commerce they said that Mr. Christian "does not possess the qualifications demanded in a member of the Federal Trade Commission" and that they desired a man "acceptable to, and in a broad sense, representative of, the great agricultural interests of the nation." W. S. Stone, grand chief of the Brotherhood of Locomotive Engineers, presided at the meeting.

### Shop Unions Lose Suit Against the Pennsylvania

In the United States District Court at Philadelphia on February 5, the suit of "System Federation No. 90" against the Pennsylvania Railroad to enforce recognition by that road of the national brotherhoods and to have the conduct of the road with its "company unions" declared illegal was dismissed. The decision holds that the court has no power to require the railroad to comply with orders of the Railroad Labor Board.

### Several Roads Announce Wage Increases

Telegraphers on eight railroads have received increases in wages either by voluntary award of the managements or by decision of the Labor Board. Voluntary increases were awarded by the New York Central and its subsidiaries as follows: Lines east of Buffalo, five cents an hour; lines west of Buffalo, 2½ cents an hour; Ohio Central, five cents; Cleveland, Cincinnati, Chicago & St. Louis, 3½ cents; Michigan Central, three cents, and Pittsburgh & Lake Erie, three cents. Voluntary increases ranging from two to eight cents an hour have been awarded by the Rutland to its telegraphers.

### Railroad Unions Object to Pomerene as Oil Scandal Investigator

Opposition to the confirmation by the Senate of the appointment of Atlee Pomerene, formerly United States Senator from Ohio, as special counsel for the government in connection with the oil lease matter, was expressed by representatives of three railroad labor organizations at a hearing before a Senate committee on February 11. J. Paul Stephens, deputy president of the Brotherhood of Railroad Trainmen, W. M. Clark, vice-president of the Order of Railway Conductors, and J. J. Forrester, of the Brotherhood of Railroad Clerks, appeared before the committee and said they opposed Mr. Pomerene on the ground that he had not had sufficient experience in handling that kind of legislation. Mr. Pomerene has previously been attacked by the labor organizations because of his part in the formulation of the transportation act.

## Foreign Railway News

### Germany Gets Order for Locomotives for India

A locomotive manufacturer in Hanover, Germany, has secured an order for five locomotives from the government of India, according to a wireless dispatch from London to the New York Times. This order was placed in London by the High Commissioner for India who, however, had little choice in the awarding of the contract, since he had been instructed by the Indian legislature to place the order with the lowest bidder and the German bid was 40 per cent below that of the British bidder.

### American Company to Build Railway in Colombia

An American company has secured a contract for the construction of a line of railway about 300 miles long through the department of Bolivar between the cities of Cartagena and Medellin, Colombia, according to the Wall Street Journal. The national government will pay to the departmental government approximately \$25,000 per mile toward the construction of the new line and the contractor will take his payment in 6 per cent bonds of the department of Bolivar at 85 per cent of their face value. The new line is to be built as a link in the plan to connect the cities of Bogota and Medellin with the sea.

### Latvian Railway Business Improves

The Latvian State Railways show considerable improvement in operation and revenue for the first nine months of 1923, compared with the same period of 1922, according to Commerce Reports. Freight transported amounted to 2,022,000 tons, against 1,590,000 tons in the same period of 1922. The number of passengers carried in the 1923 period was 8,287,000, compared with 5,848,000 for the same period of the preceding year. The number of trains operated increased from 54,196 in the first nine months of 1922 to 65,522 in 1923, and train miles advanced from 2,076,380 to 2,577,960. Revenues increased \$400,000 over the \$4,000,000 earned in the corresponding months of 1922.

### Through Railway Traffic Resumed in Cologne Area

The British authorities who are occupying the area around Cologne, Germany, have reached an agreement with the Franco-Belgian Régie, which operates the railways in the Ruhr district, occupied by French and Belgian troops, whereby through train service will be operated into the Cologne area. This service was stopped when the French occupied the Ruhr area because of the inability of the French and Belgians to reach an agreement with the British as to the terms under which through service would be handled. The Cologne railways will continue, as heretofore, under German operation, but the Régie will have operating rights through the district.

### U. S. Trade Commissioner to England Reports on Success of Railway Consolidation

The consolidated railways of Great Britain are rapidly attaining an efficiency that surpasses pre-war operations in many respects, says Trade Commissioner H. B. Allin-Smith in a report to the U. S. Department of Commerce. The outstanding accomplishments of 1923 fall into the following categories: Further co-ordination of new groups; introduction of modernized equipment and revised operating schedules; expanded replacement programs for unemployment relief; reduction of charges; preparation of standard tariffs and revision of freight classification; adjustments of hours and service conditions of railway staffs; increases of traffic accompanying better trading year which require additional facilities.

By order of the Amalgamation Tribunal, the effective date of consolidation of the four railway groups was fixed at January 1, 1923. By the end of September, 1923, the members found their task completed, so that the Tribunal dissolved in October, 1923, leaving the new groups—London, Midland &

Scottish, London & North-Eastern, Great Western and Southern—controlling total route mileages of 7,790, 6,590, 3,800 and 2,200, respectively. This area arrangement has paved the way for many co-operative changes that are hardly apparent to the railway user except in improved service. The rolling stock of all groups is in process of standardization, both as to color and design, and a small part already done stands to the credit of the first year of grouping.

Many innovations were introduced in twelve months of operation under consolidation, and others are foreshadowed. Some of the non-stop long-distance runs are entirely new features. One is the North-Western journey from London (Euston) to Prestatyn, a distance of 205 miles. The North-Eastern has developed a Harrogate special from London which makes a 3-hour and 25-minute run to Leeds, the first stop, a distance of 185 miles. The Great Western established a speed record on its Swindon-to-London service, covering 77½ miles in 75 minutes, or an average speed of 61.8 miles an hour. Longer runs have been speeded up, as, for instance Paddington (London) to Aberystwyth, Wales, 234 miles, now advanced from a 7-hour to slightly under a 6-hour journey.

The modernization of rolling stock equipment covers a wide range. Larger and more powerful locomotives are being introduced. New passenger engines of the Great Western, the most powerful used in Great Britain, have a tractive force of 31,625 pounds, compared with previous four-cylinder types of 27,800 pounds. The Northeastern lines have installed higher-powered freight locomotives for the coal, steel and other heavy traffic of east coast industrial areas served by that system.

The Great Western Railway has been pioneering steadily during 1923 for larger freight cars and offers 5 per cent freight rebates to private owners for the adoption of 20-ton coal cars. The Great Western also intends to adopt Pullman vestibules, articulated passenger cars, electrical cooking and lighting, steam heat, automatic couplings and to experiment on bufferless short-coupling trains, an entirely original departure for English lines.

The year opened with a cut in all passenger fares to 50 per cent above 1914 levels from the existing 75 per cent. Freight tariffs underwent a sweeping reduction about August 1 to a general average of 50 per cent over pre-war on merchandise traffic. Dock charges at railway-controlled ports, such as the Great Western chain along the Bristol Channel, or at the railway-owned facilities of the North-Eastern in North Sea ports, have also become less burdensome to traders during the year. The railway groups have gone so far in these several concessions that there is little immediate prospect for further reductions.

The Railway Rates Tribunal, set up by the Railways Act of 1921, was entrusted with the preparation of a revised commodity classification and the adoption of an agreed schedule of standard charges. The first has appeared in published form and the second is in process of publication. The classification will include 21 separate numbered classes of merchandise instead of 8 at present used, some of the exceptional items in current tariffs having been made distinct classes. Its actual adoption now awaits the selection of the "appointed day" on which the proposed standard charges, when agreed, will come into effect in conjunction with the classification. Because of inherent difficulties, as much as two years may elapse before the prescribed rate bases can come into use.

Satisfactory smoothness has been continued in the adjustment of railway labor matters during 1923. Wages have altered but slightly downward with the cost of living decline, until the mid-year. Since then a steady recovery of the index to 77 per cent in November will mean that workers entitled to a bonus on the standard wage will receive an increase of one shilling weekly from January 1, 1924.

### Japanese Railwaymen Given Police Powers

TOKYO.

The Japanese government has given station masters, trainmen and their immediate subordinates police authority. Since the September earthquake a great shifting of population has been going on in and around Tokyo and Yokohama. While the population in Tokyo and Yokohama has been falling off that in their suburbs has continued to increase. The result is that the people who

avail themselves of the Government Railways' suburban services are now more than 100 per cent larger than before the earthquake of September. Often crowds of passengers are uncontrollably large to the dismay of station officials. Sometimes, chiefly in rush hours, their scramble for seats, or rather space, leads to casualties. Station masters and trainmen are therefore given police authority evidently for the purpose of controlling the crowds.

### Two Leaders of Transportation Unions

in Britain's Labor Cabinet

Two leaders of transportation unions have been appointed to membership in the Labor cabinet now conducting the government of Great Britain. One of these is J. H. Thomas, general secretary of the National Union of Railwaymen, who holds the portfolio of Secretary of State for the Colonies, and the other is Harry Gosling, president of the Transport and General Workers' Union, who has been appointed Minister of Transport.

Mr. Thomas began his career as a locomotive cleaner and served as a fireman and, later, as an engineman. He has been a member of Parliament from Derby since 1910, in which year he was first



P. & A.

**J. H. Thomas, Railway Union Leader and Colonial Secretary in the Labor Cabinet Now Governing Great Britain**

elected to important office in his union. He is a member of the King's Privy Council and is considered to be one of the most conservative labor leaders in the country.

Mr. Gosling was a transport worker along the Thames river and in 1893 was elected to office in the Amalgamated Society of Watermen, Lightermen and Bargemen, serving as general secretary until 1910, when this organization was merged into the Transport Workers' Federation, of which latter organization he was elected president. In 1922 he was elected president of the Transport and General Workers' Union. Mr. Gosling has long been in politics, having served on the London County Council almost continuously for 28 years. He is a member of the Port of London Authority and holds the rank of Companion of Honor granted to him for his services during the war. He became a member of Parliament a year ago. Both he and Mr. Thomas resigned their positions with the unions upon entering the cabinet.

THE SAFETY SECTION of the American Railway Association will hold its fourth annual meeting at the Newhouse Hotel, Salt Lake City, Utah, on Tuesday, Wednesday and Thursday, June 24, 25 and 26. The notice, issued by Secretary J. C. Caviston, New York, recommends early reservation of rooms direct with the hotel management. The rates vary from \$2.50 a day for a single room for one person, with shower bath, up to six dollars a day for room with twin beds and bath.

## Equipment and Supplies

### Locomotives

THE UNION RAILROAD has ordered two, 0-6-0 switching type locomotives from the American Locomotive Company.

THE CHARCOAL IRON COMPANY OF AMERICA has ordered one Mogul type locomotive from the Baldwin Locomotive Works.

THE PHILADELPHIA SLAG COMPANY has ordered one 0-6-0 switching type locomotive from the Baldwin Locomotive Works.

THE DIAMOND & CALDER RAILWAY, San Francisco, has ordered one 60-ton Shay type locomotive from the Lima Locomotive Works.

THE LINCOLN SAND & GRAVEL COMPANY, Chicago, Ill., has ordered one 0-6-0 switching type locomotive from the Baldwin Locomotive Works.

THE CIA. MOGYANA DE ESTRADOS DE FERRO, Brazil, has ordered 6 Mikado type locomotives and 2 Pacific type locomotives from the American Locomotive Company.

THE NEW YORK CENTRAL, reported in the *Railway Age* of February 2 as having placed an order for 70 or 80 locomotives, ordered 35 of the locomotives from the Lima Locomotive Works; these are 8-wheel switching type locomotives. An order was also given to the Lima Locomotive Works for 35, 15,000 gal. tenders. A contract for 34 switching type locomotives was also let to the American Locomotive Company. Inquiries are now being made for a number of locomotives for road service.

### Freight Cars

THE DENVER & RIO GRANDE WESTERN is inquiring for 500, 40-ton automobile cars.

THE MISSOURI PACIFIC is inquiring for 1,000 single sheathed automobile cars.

THE PENNSYLVANIA is reported to be coming into the market for 9,000 freight cars.

THE EMPIRE OIL WORKS, Oil City, Pa., is reported to be in the market for 370 tank cars.

THE CENTRAL OF GEORGIA contemplates having repairs made to 100 steel underframe box cars.

THE CHESAPEAKE & OHIO is having repairs made to 500 steel gondola cars in the shops of the Hocking Valley Railroad.

THE AMERICAN TAR PRODUCTS COMPANY, Chicago, has ordered ten 10,000 gal. insulated tank cars from the Chicago Steel Car Company.

THE ATLANTA TAR & CHEMICAL CO., Elizabeth, N. J., has ordered twenty 50-ton 10,000 gal. tank cars from the American Car & Foundry Co.

THE CALIFORNIA DISPATCH LINE, San Francisco, Cal., has ordered 5 tank cars of 8,000 gal. capacity and 5 tank cars of 10,000 gal. capacity, from the Pennsylvania Car Company.

THE ATCHISON, TOPEKA & SANTA FE, reported in the *Railway Age* of January 26 as inquiring for 500, 55-ton gondola cars, has ordered this equipment from the American Car & Foundry Company.

THE FRUIT GROWERS EXPRESS has ordered 500 steel underframes for refrigerator cars from the Western Steel Car & Foundry Company and will build 1,000 refrigerators in its own shops.

THE EL PASO & SOUTHWESTERN, reported in the *Railway Age* of February 2 as inquiring for 400 box cars, has ordered this

equipment from the Standard Steel Car Company. The cars are of 50 tons' capacity.

THE NORFOLK & WESTERN, reported in the *Railway Age* of February 2 as inquiring for 4,000 steel hopper cars of 70 tons' capacity, has ordered 2,000 of these cars from the Ralston Steel Car Company, 1,000 from the Pressed Steel Car Company and 1,000 from the Virginia Bridge & Iron Company.

### Passenger Cars

THE NEW YORK RAPID TRANSIT CORPORATION is inquiring for 148 car body underframes.

THE PACIFIC ELECTRIC is inquiring for 12 double-end, double-truck and 50 center-entrance street cars.

THE SOUTHERN PACIFIC, reported in the *Railway Age* of January 19 as contemplating coming in the market soon for 25 passenger cars, is now inquiring for 23 passenger cars.

### Iron and Steel

THE CHICAGO UNION STATION COMPANY has ordered 5,000 tons of structural steel from the Strobel Steel Construction Company. The fabrication has been sub-let to the Mt. Vernon Bridge Company.

THE ARGENTINE GOVERNMENT RAILWAYS inquired recently for 40,000 tons of rail and placed 20,000 tons with Belgian builders, payments to be made in one, two and three-year periods. The English and French rail makers refused to negotiate on the above basis and the inquiry for the remaining 20,000 tons was withdrawn. It is expected that new inquiries will be issued soon for 20,000 tons. Through a typographical error this item was reported under the name of the Canadian National last week.

### Track Specialties

THE MISSOURI PACIFIC has ordered 300,000 tie plates from the Illinois Steel Company, 600,000 from the Inland Steel Company, 500,000 from the Colorado Fuel & Iron Co., 600,000 from the Tennessee Coal, Iron & Railroad Co., 500,000 from the Scullin Steel Company, St. Louis, Mo., and 500 tons from the Sellers Manufacturing Company.

### Miscellaneous

THE ERIE has given a contract to the Mahr Manufacturing Company, Minneapolis, Minn., for the installation of a complete individual blower system for all the furnaces in its blacksmith shops in its repair shop at Susquehanna, Pa. This installation will require 30 "Mahrvel" blowers of various sizes.

### Signaling

THE SOUTHERN RAILWAY has ordered from the Hall Switch & Signal Company, 24 searchlight lamps for highway crossings.

THE NEW YORK, CHICAGO & ST. LOUIS has ordered from the Hall Switch & Signal Company, 44 searchlight lamps for highway crossings.

THE GRAND TRUNK OF CANADA has ordered from the Hall Switch & Signal Company, 48 searchlight lamps for highway crossing signals.

THE TEXAS & PACIFIC RAILWAY has ordered from the Union Switch and Signal Company an eight-lever Saxby & Farmer interlocking plant for a crossing with the line of the Texas Interurban Railway, at Dallas, Tex.

THE ATLANTIC COAST LINE has ordered from the Union Switch & Signal Company 104 Style "S" double case 1-arm 3-position semaphore signals to be installed between Parkton, N. C., and Pee Dee, S. C.; also two Style "S-S" electro-mechanical interlocking machines, one at Dielon, S. C., 24 mechanical and 2 electric levers, and the other at Pembroke, N. C., 13 working and 3 spare mechanical levers and 8 electric levers.

## Supply Trade News

The Sullivan Machinery Company, Chicago, has moved its Birmingham, Ala., office to 2108 Fifth avenue North.

The Morden Frog & Crossing Works, Chicago, will construct a 100-ft. by 240-ft. extension to its main shops, and a new saw mill 88 by 64 ft., at a cost of \$100,000, including new machinery, at Chicago Heights, Ill.

Edwin B. Meissner, vice-president of the St. Louis Car Company, with headquarters at St. Louis, Mo., has been elected president and general manager, succeeding John I. Beggs, who has been elected chairman of the board.

Pierce Lewis of the advertising department of the Truscon Steel Company, with headquarters at Detroit, Mich., has been promoted to advertising manager, with headquarters at Youngstown, Ohio, succeeding S. M. Fechheimer, who has resigned.

The Tennant Company, Union National Bank building, Houston, Texas, now represents the Heine Boiler Company, St. Louis, Mo., in a new territorial division comprising the entire southern half of the state of Texas. J. A. Tennant is in charge of this office. Smith & Whitney, Dallas, Texas, will continue as representative of the Heine Boiler Company in the northern half of Texas.

John W. Floto, whose promotion to vice-president and general manager of sales of the Globe Steel Tubes Company, with headquarters at Chicago, was announced in the *Railway Age* of February 9, was born on September 6, 1884, at Chicago. He entered the employ of the American Steel & Wire Company in 1898 as a salesman at Chicago and was later promoted to sales assistant, which position he held until 1911, when he entered the employ of the Cambria Steel Company as a salesman. He held the latter position until 1918, when he entered the employ of the Globe Steel Tubes Company as a sales agent with headquarters at Chicago, which position he held for six months, when he was transferred to Detroit, Mich. In 1922 he was promoted to manager of sales with headquarters at Chicago, which position he held until March, 1923. On the latter date he was promoted to general manager, which position he has held until his recent promotion.



J. W. Floto

The McVicker Railclamp Tieplate Company has been incorporated with headquarters at 221 Grand avenue, Milwaukee, Wis., and with \$1,000,000 capital stock, to manufacture rail anchor tie plates as the successor to the Railway Safety Tie Company. The company has purchased a plant at Winthrop Harbor, Ill., which it will equip with machinery. E. M. McVicker is president, A. M. Masters is vice-president and J. E. Radke is secretary.

The thirty-first annual dinner of the Chicago Railway Equipment Company was held at the Union League Club in Chicago on Tuesday evening, February 5. E. B. Leigh, the president of the company, who presided at the dinner, has been present at all the thirty-one dinners. It has been the custom to invite to these dinners for some years, prominent railway officers and business

men not connected with the company, but on this occasion the guests were all officers and employees of the company. The principal speaker at the annual dinner was James A. Emery of Washington, D. C.

R. M. Kincaid, works manager since August, 1920, for the U. S. Light & Heat Corporation, Niagara Falls, N. Y., has resigned, effective March 1, to go with the Garford Motor Truck Company, Lima, Ohio. J. K. Gould will have charge of that part of Mr. Kincaid's former work which had to do with the manufacture of batteries, his title being superintendent battery division and Otto Von Goeben will have charge of that part of Mr. Kincaid's work which had to do with the device and arc welder end of the business, with the title of superintendent of the device division.

Paul J. Kalman, whose appointment as chairman of the board of directors of the Globe Steel Tubes Company, with headquarters at St. Paul, Minn., was announced in the *Railway Age* of February 9, was born on April 1, 1879, at New York. He entered railway service in 1897, with the Chicago Great Western. In 1901 he entered the railway supply business as president of the Paul J. Kalman Company, which company later branched out into the reinforced steel and building products business and changed its name to the Kalman Steel Company in 1922. In 1919 he also organized and became president of the Hudson Motor Company of Illinois, and on January 1, 1920, was also elected president of Bliss & Laughlin, Inc., Harvey, Ill. In August, 1922, he became president of the Globe Steel Tubes Company, Chicago, which company at that time took over the business of the Globe Seamless Steel Tubes Company, Milwaukee, Wis. Mr. Kalman is also president of the Kalman Floor Company, which was organized in 1916.



Paul J. Kalman

The National Car Wheel Company, with main plant in West Homestead, Pa., has been sold to the American Brake Shoe & Foundry Co., New York. The annual output of the company is 120,000 tons. J. D. Rhodes, chairman of the board of the National Car Wheel Company and George P. Rhodes, president, have resigned. Joseph B. Terbell has been elected chairman of the National Car Wheel Company. W. F. Cutler, president, F. C. Turner, first vice-president, George M. Judd, secretary, Andrew Muirhead, treasurer, and the other officers of the National Car Wheel Company, remain as formerly.

James S. Ervin, formerly in charge of the sale of mineral rubber and special asphalts of the H. H. Robertson Company, Pittsburgh, Pa., manufacturers of Robertson process asbestos protected metal skylights, ventilators, etc., has been appointed manager of sales, with headquarters at Pittsburgh, to succeed C. D. Mercer, who has resigned. J. R. Sexton, who has been in charge of the company's railroad sales for the past year, has been appointed a district manager with headquarters in Chicago, to succeed the late Hillis F. Hackedorn. Mr. Sexton will remain actively in charge of railroad sales as well as supervise sales in other fields.

### January Shipments of Locomotives

The Department of Commerce has prepared the following table comparing the January, 1924, shipments of locomotives from principal plants with the previous month and with the corresponding month of 1923, as well as cumulative totals of seven months end-

ing January, 1924, compared with the corresponding period ending January, 1923, in number of locomotives:

	LOCOMOTIVES			Cumulative total July to January	
	January, 1924	December, 1923	January, 1923	1924	1923
Shipments—					
Domestic .....	147	305	217	1,800	1,053
Foreign .....	4	24	12	135	88
Total .....	151	329	229	1,935	1,141
Unfilled orders (end of month)—					
Domestic .....	344	365	1,699	....	....
Foreign .....	32	22	89	....	....
Total .....	376	387	1,788	....	....

## Trade Publications

**POWER REVERSE GEAR.**—The Barco Manufacturing Company has recently brought out catalogue No. 94, outlining in a simple and concise way the advantages of the Barco power reverse gear. The arrangement of this gear for either air, steam or hand operation is explained; also the use of a worm and gear to hold the point of cut-off, thus tending to prevent cushioning and creeping. Several illustrations are included showing the gear in phantom and as it is applied to locomotives. A large scale drawing in partial cross section shows all detailed parts of the gear, giving the name of each part.

**THE AUTOMATIC FIRE DOOR.**—The present position in the field of locomotive operation of the automatic fire door, particularly as relates to the Shoemaker radial fire door, is clearly outlined in a four-page circular recently issued by the National Railway Devices Company, Chicago. The construction of the Shoemaker radial type door is clearly shown and red arrows pointing to various parts of the door emphasize its operating advantages. The fourth page of the circular is devoted to a diagram which shows the clearance lay-out of the Shoemaker radial fire door with a commonly applied mechanical stoker.

**BRICK PAVEMENT CONSTRUCTION.**—The National Brick Paving Manufacturers' Association, Cleveland, Ohio, have issued a 92-page book, bound in cloth, which comprises a treatise on modern brick pavement. The subject is treated in a logical sequence with chapters on drainage, grading, curbs, bases, etc., followed by discussions of the pavement itself. The book is amply illustrated with line drawings of sections of pavement and half-tone reproductions of photographs of a large number of pavements and roads throughout the country. While dealing primarily with pavements, attention is also given to roadways, station platforms, etc.

**ALL METAL CAR CONNECTIONS.**—A four-page catalogue No. 83 has been issued by the Barco Manufacturing Company, Chicago, devoted to steam heat connections between passenger cars, pointing out the benefits to be derived from making these connections metallic. Tests are quoted to show that the metallic joints tend to promote safety and in a specific case enable the regulating valve pressure to be increased 50 per cent or from 61 lb. to 93 lb. With this initial pressure 5 lb. of steam was obtained at the rear of a 10 car train in 6 min. 21 sec. Metallic steam heat and air connections in stations and yards are also shown in several illustrations.

A SPECIAL BILL-OF-FARE for children is now a feature in the dining cars of the Canadian National Railways. The items have been selected after consultation with a well-known dietitian and the menu is presented as a suitable guide for use with children of all ages up to ten. Parents traveling often feed their children food bought prior to the journey, rather than make use of the dining car service, because of a feeling that it would be a difficult task to choose from the regular menu. The children's menu, for each meal, breakfast, dinner and tea contains four combinations of fare, breakfast ranging in price from 40 cents to 60 cents, dinner from 50 to 85 cents, and tea from 35 to 65 cents. As the dining car steward passes through the cars, announcing the calls for meals, he gives one of these special bills to each passenger traveling with a child. In addition to the menu proper, there are pictures printed in blue and brown and verses that appeal to children's fancy.

## Railway Construction

**ATCHISON, TOPEKA & SANTA FE.**—This company plans the construction this year of a new passenger station and additions to its shops at Cleburne, Texas. A new bridge across the Canadian river at Canadian, Texas, and additions to the shops at Emporia, Kans., will also be constructed. Appropriation has also been made for a double track bridge across the Mississippi river at Fort Madison, Ia., for which plans are now being prepared.

**CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS.**—This company contemplates the construction of an addition to its roundhouse at Sharonville, Ohio. Plans for the extension have not been made nor has its construction been definitely authorized.

**LOUISVILLE & NASHVILLE.**—This company has awarded a contract to Platoff & Bush, Louisville, Ky., for the construction of a one-story machine shop at Etowah, Tenn., reported in the *Railway Age* of January 5.

**MARSHALL, ELYSIAN FIELDS & SOUTHEASTERN.**—The Interstate Commerce Commission has issued a certificate authorizing an extension from Elysian Fields to Lorraine, Tex., about 10 miles.

**NEW YORK, CHICAGO & ST. LOUIS.**—This company contemplates the construction of second track from Claypool, Ind., to Knox, a distance of 40 miles. Surveys are now being made, but the work has not yet been authorized and it has not been determined when bids will be called for.

**PANHANDLE & SANTA FE.**—This company plans the construction of additional yard tracks and the extension of the existing tracks, including the placing of several crossovers, at Lubbock, Texas, at an estimated cost of \$35,000. The work will be done by company forces.

**PENNSYLVANIA.**—This company will rebuild its roundhouse and shops at Valparaiso, Ind., which were damaged by fire on January 17 with a reported loss of \$25,000.

**PRESCOTT & NORTHWESTERN.**—The Interstate Commerce Commission has issued a certificate authorizing the construction of a line from Prescott, Ark., in an easterly and southerly direction about 26 miles.

**SOUTHERN.**—This company has awarded a contract to John P. Pettyjohn & Company, Lynchburg, Va., for the construction of a repair shop at Ferguson, Ky., reported in the *Railway Age* of January 19.

**SOUTHERN PACIFIC.**—This company has awarded a contract for the construction of a passenger station at Redlands, Cal., reported in the *Railway Age* of September 25. The estimated cost of the building is \$75,000.

**SOUTHERN PACIFIC.**—This company is calling for bids for the construction of an 11-mile section of the Natron cutoff from Oakridge, Ore., to Summit.

**ST. LOUIS-SAN FRANCISCO.**—This company will reconstruct with its company forces, the passenger station at Lebanon, Mo., recently damaged by fire with a loss of \$20,000.

**UNION PACIFIC.**—This company plans the construction of additions to its engine terminal at East Yard, Los Angeles, Cal., at an estimated cost of \$150,000. The plans call for a one-story shop building, 40 ft. by 300 ft., another shop building, 40 ft. by 100 ft., and an 11-stall roundhouse.

**WYOMING NORTH & SOUTH.**—This company has applied to the Public Service Commission of Wyoming for permission to construct an extension to the Billy Creek, Wyo., oil fields.

**WOMEN EMPLOYEES** of the Great Northern at St. Paul, Minn., have organized a club similar to the Great Northern Railway Club which was recently organized by men.

## Railway Financial News

CAROLINA, CLINCHFIELD & OHIO.—*Lease*.—See article on another page of this issue entitled "Conditions for Clinchfield Lease Suggested."

CHICAGO GREAT WESTERN.—*Bond Issue*.—This company has applied to the Interstate Commerce Commission for authority for a nominal issue of \$2,000,000 of first mortgage 50-year 4 per cent bonds to reimburse the treasury for expenditures from income not heretofore capitalized.

CHICAGO, MILWAUKEE & ST. PAUL.—*Bond Issue*.—The Interstate Commerce Commission has authorized an issue of \$14,000,000 of 10-year 6 per cent first mortgage bonds to be sold at not less than 92½ and the pledge of \$20,000,000 of general mortgage 5 per cent bonds as security.

CHICAGO UNION STATION COMPANY.—*Bond Issue*.—This company and its proprietary companies have filed a joint application with the Interstate Commerce Commission for authority to issue and sell \$7,000,000 of first mortgage gold bonds of the station company, guaranteed by the proprietary companies, and also for the sale of \$850,000 of similar bonds heretofore issued by the station company. It is proposed to sell the bonds to Kuhn, Loeb & Co.; Lee, Higginson & Co.; the Illinois Merchants' Trust Company, Chicago; and the National City Company and the First National Bank of New York, at 94¾.

CLEVELAND, CINCINNATI, CHICAGO & ST. LOUIS.—*New Director*.—Jackson E. Reynolds, president of the First National Bank of New York, has been elected a director. Mr. Reynolds is also a director of the Delaware, Lackawanna & Western and the New York Central.

DENVER & RIO GRANDE WESTERN.—*Improvements Authorized*.—The Federal Court at Denver, Colo., has approved the expenditure by this company of \$2,855,635 during 1924. Various line and equipment improvements are planned.

EASTERN MAINE.—*Authority to Issue Stock Disallowed*.—The Interstate Commerce Commission has dismissed this company's application for authority to issue \$2,000,000 of capital stock for the construction of a proposed line of railroad for which the commission has denied a certificate.

FONDA, JOHNSTOWN AND GLOVERSVILLE.—*Bond Issue*.—The Interstate Commerce Commission has issued a modified order permitting this company to sell \$300,000 of first consolidated general refunding mortgage bonds at not less than 65 instead of \$550,000 of bonds at not less than 75, as previously authorized.

FRANKFORT & CINCINNATI.—*Abandonment Proceedings*.—The Interstate Commerce Commission has made public a proposed report of Attorney-Examiner Boles recommending that the commission deny this company's application for a certificate authorizing the abandonment of the line from Frankfort to Paris, Ky., 40.8 miles.

HOUSTON & BRAZOS VALLEY.—*To Terminate Receivership*.—At a meeting of the stockholders at Freeport, Texas, on February 4, C. J. Rogar was elected president and general manager. The removal of the road from the present receivership, which has existed for eight years, is proposed.

ILLINOIS CENTRAL.—*Bond Issue*.—This company, the Chicago, St. Louis & New Orleans and the Canton, Aberdeen & Nashville have applied to the Interstate Commerce Commission for authority to issue \$6,486,000 of Illinois Central and Chicago, St. Louis & New Orleans joint first refunding 5 per cent bonds and the Illinois Central has asked authority to sell them, together with \$5,116,000 of similar bonds held in the treasury, at 91.25 to Kuhn, Loeb & Co., for the purpose of reimbursing the treasury for expenditures.

KANSAS CITY, MEXICO & ORIENT.—*Court Orders Sale*.—The Federal Court at Kansas City, Mo., has ordered the sale of this road as a result of the failure of the company to pay a government

loan of \$2,757,000 which was due on December 1, 1923. The sale will be held at Wichita, Kan., and will be conducted by Ben F. McLean, president of the Fourth National Bank of Wichita, who has been appointed special master by the court. The date of the sale will be set by Mr. McLean.

MARSHALL & EAST TEXAS.—*Notice to Creditors*.—Bryan Snyder, receiver, has announced that a hearing will be held February 21 at Jefferson, Texas, looking to the disposition of the assets and liabilities of this property.

MINNEAPOLIS, ST. PAUL & SAULT STE. MARIE.—*Note Issue*.—This company has applied to the Interstate Commerce Commission for authority for an issue of \$3,471,000 of 5½ per cent 25-year notes to be secured by the pledge of the stock of the Wisconsin Central and to be used in exchange for the outstanding minority shares of the Wisconsin Central and for other purposes. There are outstanding 80,263 shares which the Soo does not own but which it proposes to acquire by exchanging notes for shares at the rate of \$43.25 per share.

NEW YORK CENTRAL.—*Reading Rights*.—This company has extended from March 1 to May 1 the time within which stockholders may purchase Reading rights from the company. The warrants for the rights will be mailed to the New York Central stockholders about March 20.

NEW YORK, CHICAGO & ST. LOUIS.—*Equipment Trust Certificates*.—This company has applied to the Interstate Commerce Commission for authority for an issue of \$2,865,000 of 6 per cent equipment trust certificates.

PENNSYLVANIA.—*New Director*.—Jay Cooke has been elected a director to succeed Spencer C. Gilbert, deceased.

PHILADELPHIA, BALTIMORE & WASHINGTON.—*Bond Issue*.—This company has applied to the Interstate Commerce Commission for authority to issue and deliver to the Pennsylvania \$10,000,000 of general mortgage 5 per cent bonds, in reimbursement of advances for additions and betterments, and the Pennsylvania has asked authority to guarantee and sell the bonds.

PITTSBURGH, YOUNGSTOWN & ASHTABULA.—*Bond Issue*.—This company has applied to the Interstate Commerce Commission for authority for an issue of \$690,000 of general mortgage 5 per cent bonds and the Pennsylvania has asked authority to guarantee the bonds and sell \$4,479,000, including some now held.

ST. LOUIS-SAN FRANCISCO.—*Bond Interest*.—The directors have declared a semi-annual interest installment of 3 per cent on the 6 per cent cumulative adjustment bonds for the last half of 1923, payable April 1.

WISCONSIN CENTRAL.—*Soo Exchange Offer*.—See Minneapolis, St. Paul & Sault Ste. Marie.

### Dividends Declared

Canadian Pacific.—Common, 2½ per cent, quarterly, preferred, 2 per cent, semi-annually; both payable April 1 to holders of record February 29.

Cripple Creek Central.—Preferred, 1 per cent, payable March 1 to holders of record February 15.

### Trend of Railway Stock and Bond Prices

	Feb. 11	Last Week	Last Year
Average price of 20 representative railway stocks .....	63.18	63.52	68.63
Average price of 20 representative railway bonds .....	83.99	84.35	85.51

THE CANADIAN NATIONAL, in conjunction with the Canadian Government Merchant Marine, will inaugurate car ferry service between the termini of the Canadian National and the Esquimalt & Nanaimo on the inner harbor at Victoria, B. C., and the Canadian government wharf on the outer harbor. Tracks will be laid on the wharf so that freight from up-island points destined for foreign ports may be unloaded directly at the wharf instead of being unloaded at the respective termini and then carried five miles by auto truck. The estimated cost of the ferries and the improvements at the wharf will approximate \$125,000.

## Railway Officers

### Executive

**John Sherwin** has been elected vice-president of the New York, Chicago & St. Louis, with headquarters at Cleveland, Ohio.

### Financial, Legal and Accounting

**L. O. Heintz** has been appointed auditor of the Escanaba & Lake Superior, with headquarters at Wells, Mich.

**W. L. Kitchell** has been appointed general counsel for the Cincinnati, Indianapolis & Western, with headquarters at New York. **A. P. Donadio** has been appointed assistant general attorney, with headquarters at Indianapolis, Ind.

### Operating

**C. M. Winter** has been appointed assistant to the general manager of the Minneapolis, St. Paul & Sault Ste. Marie, with headquarters at Minneapolis, Minn., succeeding **E. F. Potter**, who has retired.

**D. S. Fraser**, superintendent of dining and sleeping car service on the Canadian Pacific, with headquarters at Calgary, Alberta, has been transferred to Vancouver, B. C., succeeding **F. A. Tingley**, deceased.

**H. W. McAbee**, manager of the St. Catherine Hotel, Catalina Island, has been appointed superintendent of dining car service of the Denver & Rio Grande Western, with headquarters, at Denver, Colo.

**H. A. Jaggard**, division superintendent of the Pennsylvania, with headquarters at Elmira, N. Y., has been appointed secretary association of transportation officers, with headquarters at Philadelphia, Pa., succeeding **A. G. Mitchell**. **Paul Jones**, division superintendent with headquarters at Fort Wayne, Ind., has been appointed assistant division superintendent, with headquarters at Cincinnati, Ohio.

**G. N. Harder**, assistant to the president and acting general manager of the Escanaba & Lake Superior, with headquarters at Wells, Mich., has been promoted to general manager, with the same headquarters, succeeding **C. W. Kates**, whose death on November 12, 1923, was reported in the *Railway Age* of November 17. **August Blomstrom** has been appointed superintendent, with headquarters at Wells.

**R. L. Ruby**, whose promotion to superintendent of transportation of the Southern Pacific, with headquarters at San Francisco, Cal., was reported in the *Railway Age* of February 9, entered railway service in August, 1892, as a clerk on the Atchison, Topeka & Santa Fe. He was later promoted to enginemen's timekeeper in the mechanical department and in 1897, was appointed clerk in the office of the trainmaster. He was promoted to division accountant and chief clerk to the division superintendent on the Gulf, Colorado & Santa Fe in 1899, and he held this position until 1904 when he was promoted to traveling agent. In 1909 Mr. Ruby was promoted to chief clerk to the general superintendent. He entered the service of the Southern Pacific in July, 1910, as assistant superintendent of transportation, and continued in this capacity until his recent promotion to superintendent of transportation.

### Traffic

**C. G. Hayes** has been appointed general agent for the Texas & Pacific, with headquarters at Detroit, Mich.

**R. McMorran**, traveling passenger agent for the Canadian Pacific, with headquarters at Vancouver, B. C., has been promoted to assistant to the Australasian representative, with headquarters at Sydney, Australia.

**H. A. Benjamin** has been appointed traffic manager of the Des Moines & Central Iowa, with headquarters at Des Moines, Iowa.

**L. B. Burford** has been appointed general freight and passenger agent of the Erie, with headquarters at New York, succeeding **W. M. Orr**, deceased.

**D. C. Stephenson**, commercial agent for the Chicago, Rock Island & Pacific, with headquarters at Kansas City, Mo., retired from active service on January 1.

**C. W. Price** has been appointed assistant general passenger agent of the Union Pacific, with headquarters at Salt Lake City, Utah, succeeding **J. B. Durham**, who has retired.

**H. L. Fairfield** has been appointed manager of mail, baggage and express traffic of the Illinois Central, with headquarters at Chicago, succeeding **J. A. Osborn**, who has retired.

**R. V. Oldham** has been appointed division passenger agent for the Wabash, with headquarters at Ft. Wayne, Ind., succeeding **H. L. Pigott**, whose promotion to district passenger agent, with headquarters at Los Angeles, Cal., was reported in the *Railway Age* of January 19.

**J. J. Grogan**, traveling freight agent for the El Paso & Southwestern, with headquarters at Chicago, has been promoted to general agent, with the same headquarters, succeeding **J. F. Hogan**, whose promotion to assistant traffic manager was reported in the *Railway Age* of February 9.

**Nathan G. Campbell**, whose appointment as assistant freight traffic manager of the Central of New Jersey, with headquarters at New York, was announced in the *Railway Age* of January 12,



N. G. Campbell

page 221, was born on August 28, 1880, at Shamokin, Pa., and was graduated from the Shamokin high school in June, 1897. He entered railway service on November 27 of the same year as a messenger boy with the Philadelphia & Reading. In March of the next year he was promoted to stenographer in the office of the superintendent and later in the office of the general superintendent. In June, 1902, he left the Philadelphia & Reading to go with the Central of New Jersey as a stenographer in the office of the general manager, which position

he held until April 1, 1907, when he was promoted to assistant trainmaster at Northampton, Pa. In December of the same year he was appointed agent at Wilkes-Barre, Pa., and in November, 1910, Mr. Campbell was promoted to trainmaster at Mauch Chunk, Pa. On February 1, 1914, he was promoted to general agent at Newark, N. J., which position he held at the time of his recent promotion to assistant freight traffic manager.

The report which appeared in the *Railway Age* of January 26 to the effect that **Edwin Stewart**, division freight agent for the St. Louis-Southwestern, with headquarters at Pine Bluff, Ark., had been appointed commercial agent, with the same headquarters, was incorrect. Mr. Stewart continues as division freight agent at Pine Bluff.

**J. A. Behrle**, general freight agent of the Chicago & Alton, with headquarters at Chicago, has been promoted to freight traffic manager, with the same headquarters, succeeding **J. F. Vosburgh**, who has resigned to engage in other business. **S. A. Williams**, assistant general freight and passenger agent, with headquarters at St. Louis, Mo., has been promoted to general freight agent, with headquarters at Chicago, succeeding Mr. Behrle.

**W. S. Dewey**, general agent for the Chicago, Burlington & Quincy, with headquarters at Philadelphia, Pa., has been transferred to New York, succeeding J. A. Martin, whose death on January 18 was reported in the *Railway Age* of January 26. **H. K. Miles**, general agent with headquarters at Cincinnati, Ohio, has been transferred to Philadelphia, succeeding Mr. Dewey.

**F. T. Lonergan**, general agent, freight department, of the Chicago & Eastern Illinois, with headquarters at Minneapolis, Minn., has been transferred to New Orleans, La., in charge of a newly established agency. **A. W. Whitney**, traveling freight agent, with headquarters at Chicago, has been promoted to general agent, with headquarters at Minneapolis, succeeding Mr. Lonergan.

**Arthur Hamilton**, whose appointment as freight traffic manager of the Central of New Jersey, with headquarters at New York, was announced in the *Railway Age* of January 12, page 221, was born on February 27, 1865, at Bethel, Ill., and was educated in the public schools. He entered railway service on September 1, 1882, as a telegraph operator and station agent of the Chicago, Burlington & Quincy. In September, 1887, he was promoted to train dispatcher and in March, 1889, to freight agent. In October, 1892, he was promoted to traveling auditor and in May, 1896, he left the Chicago, Burlington & Quincy to go with the Union Elevator Company, East St. Louis, Ill., as freight agent and manager. In March, 1903, he was appointed assistant superintendent of terminals at St. Louis, Mo., and in December of the next year he was promoted to superintendent of terminals. A year later he was appointed superintendent of the Missouri and Illinois Bridge & Belt Railway at Alton, Ill. On May 1, 1906, he went with the Central of New Jersey as a general agent, with headquarters at Newark, N. J. In June, 1909, he was promoted to general freight agent at New York, which position he held at the time of his promotion.



Arthur Hamilton

**Edward Briggs**, general freight agent of the Wheeling & Lake Erie, with headquarters at Cleveland, Ohio, has been promoted to assistant to the general traffic manager, with the same headquarters, a newly created position. **C. E. Dempsey**, assistant general freight agent, with headquarters at Cleveland, has been promoted to general freight agent, with the same headquarters, succeeding Mr. Briggs. **O. B. Akerly** has been appointed assistant general freight agent, with headquarters at Cleveland, succeeding Mr. Dempsey.

**J. P. Park**, general freight agent of the St. Louis-Southwestern, with headquarters at St. Louis, Mo., has been promoted to assistant general traffic manager, with the same headquarters, a newly created position. **H. D. Landry**, assistant general freight agent, with headquarters at Little Rock, Ark., has been promoted to general freight agent, with headquarters at St. Louis, succeeding Mr. Park. **T. L. Hirshman**, general agent, freight department, with headquarters at St. Louis, has been promoted to assistant general freight agent, with headquarters at Little Rock, succeeding Mr. Landry.

### Mechanical

**O. P. Reese**, superintendent of motive power of the Pennsylvania, with headquarters at Chicago, has been appointed assistant general superintendent of motive power, with headquarters at Ft. Wayne, Ind. **G. B. Fravel**, superintendent of motive power, with headquarters at Columbus, Ohio, has been appointed assistant general superintendent of motive power, with headquarters at St. Louis, Mo.

**W. E. Dunham**, assistant to the general superintendent of motive power and machinery of the Chicago & North Western, with headquarters at Chicago, has been promoted to superintendent of the car department, with the same headquarters, succeeding T. H. Goodnow, whose resignation to become vice-president of the Ryan Car Company was reported in the *Railway Age* of February 9. **S. E. Mitchell**, chief draftsman in the mechanical department at Chicago, has been promoted to assistant to the general superintendent of motive power and machinery, with the same headquarters, succeeding Mr. Dunham.

### Engineering, Maintenance of Way and Signaling

**E. L. Hoopes**, division engineer of the Pennsylvania, with headquarters at Columbus, Ohio, has been transferred to Harrisburg, Pa., in the same capacity.

**E. E. Hart**, whose appointment as consulting engineer of the New York, Chicago & St. Louis, with headquarters at Cleveland, Ohio, was reported in the *Railway Age* of February 9, was born on September 18, 1861, at Little Valley, N. Y. He was graduated from Cornell University in 1887 and entered railway service in June of that year as a draftsman on the Chicago, Burlington & Quincy. He was subsequently promoted to assistant engineer and division engineer. In 1895 he left railway service to engage in general engineering practice, returning to railway service in July, 1899, as division engineer of the Eastern division of the New York, Chicago & St. Louis. In November of that year his jurisdiction was extended over the entire system and he continued in this position until 1906, when he was promoted to chief engineer. Mr. Hart was serving in this position at the time of his recent appointment as consulting engineer.

### Purchasing and Stores

**F. S. McClung**, general storekeeper of the Texas & Pacific, with headquarters at Marshall, Texas, has been promoted to purchasing agent, with headquarters at Dallas, Texas. **J. S. Matthias** has been appointed general storekeeper, with headquarters at Marshall, Texas, succeeding Mr. McClung.

**A. E. Owen**, whose promotion to assistant purchasing agent of the Pennsylvania, with headquarters at Chicago, was reported in the *Railway Age* of February 9, was born on March 27, 1880, at Camden, N. J. He entered railway service in April, 1896, in the department of the auditor of passenger receipts of the Pennsylvania at Philadelphia. He was transferred to the purchasing department in June, 1899, and subsequently held various positions in that department. In 1914 he was detailed to represent the purchasing department with Messrs. Gibbs and Hill, consulting electrical engineers, who were constructing the Philadelphia, Paoli and Chestnut Hill electrification. In 1917, Mr. Owen was appointed chairman of a committee which took over the management and supplying of commissaries of labor camps on the Pennsylvania lines east of Pittsburgh and Buffalo, and in 1919 he was promoted to equipment agent. He was appointed assistant to the purchasing agent of the Northwestern region, with headquarters at Chicago, in March, 1920, and continued in that position until his recent promotion to assistant purchasing agent.

### Obituary

**J. R. Veitch**, assistant traffic manager of the Chicago, Milwaukee & St. Paul, Western lines, with headquarters at Seattle, Wash., died in that city on February 12.

**D. L. Gallup**, controller of the Atchison, Topeka & Santa Fe, died at his home in New York on February 9. Mr. Gallup was 82 years of age. Born in Mystic, Conn., he spent several years teaching school in the West and then served for several years with large life insurance companies in the East. Later he entered the service of the Atchison, Topeka & Santa Fe, which was then building through the Southwest. For several years he served as head paymaster in the construction department and then returned to New York in the treasurer's department, through which he was promoted in 1901 to the position of controller, which he held at the time of his death.